

THE
NAUTICAL ALMANAC
AND
ASTRONOMICAL EPHEMERIS,
FOR THE YEAR 1780.

Published by ORDER of the
COMMISSIONERS OF LONGITUDE.

L O N D O N
PRINTED BY WILLIAM RICHARDSON,
PRINTER;
AND SOLD BY
J. NOURSE, in the Strand, and Mess. MOUNT and PAGE
on Tower-Hill,
Booksellers to the said COMMISSIONERS.
M DCC LXXVII.
[Price Three Shillings and Six Pence.]

EXTRACT from the Act of Parliament
concerning the Longitude, made in the
Fifth Year of the Reign of his present
Majesty.

WHEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from time to time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorized by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of his Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to his Majesty, his Heirs and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.

EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year of the Reign of his present Majesty.

BE it Enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of *June* One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five thousand
Pounds,

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Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it determines the same to One Half of the said Distance: Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major Part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at *Greenwich*, then in Two Voyages round the Island of *Great Britain*, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint; and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been tried

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ried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar and Lunar Tables, their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an Allowance of Half a Degree for the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed intirely upon the Principles of Gravitation laid down by Sir *Iaac Newton* (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have been further confirmed and proved by Comparifon with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward shall be due and paid, when the said Commissioners, or Two Thirds of them, at least, shall have declared and determined, that such Tables are sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens, within the Limits above-mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the First Author or Authors, Discoverer or Discoverers, of
any

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any such Method, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five thousand Pounds, if it shall determine the said Longitude within One Degree of a great Circle or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them, at least, shall, after proper Trial have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective Limits above mentioned.

And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before-mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be intitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And

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And be it further Enacted by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from time to time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy,

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Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorized and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of discovering the Longitude at Sea, shall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by this Act.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we have employed proper Persons to compute Nautical Almanacs or Astronomical Ephemerides for the Years 1779 and 1780, which will greatly contribute to make the Lunar Tables constructed by the late Professor MAYER of *Gottingen* (which you have already printed with our Authority) more generally useful; and whereas we think fit to employ you to print the said Nautical Almanacs and Astronomical Ephemerides: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to cause the same to be printed, together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as shall be delivered to you by the Reverend Mr. NEVIL MASKELYNE, his Majesty's Astronomer Royal at *Greenwich*; and for so doing this shall be your Warrant. Given under our Hands and Seals the 1st Day of *March* 1777.

To Mr. WILLIAM
RICHARDSON,
Printer in *Salisbury-*
court, Fleet-street.

SANDWICH	(L.S.)
FL. NORTON	(L.S.)
C. KNOWLES	(L.S.)
C. HARDY	(L.S.)
J. PRINGLE	(L.S.)
N. MASKELYNE	(L.S.)
T. HORNSBY	(L.S.)
J. SMITH	(L.S.)
E. WARING	(L.S.)
A. SHEPHERD	(L.S.)
P. STEPHENS	(L.S.)
M. SUCKLING	(L.S.)
J. SMITH	(L.S.)

By Order of the Commissioners,

JOHN IBBETSON, Secretary.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we think fit to employ you to publish and vend, and to cause to be published and vended, the Nautical Almanacs or Astronomical Ephemerides for the Years 1779 and 1780, together with any other useful Tables for facilitating the Method of discovering the Longitude at Sea, which will be printed under our Authority, by Mr. WILLIAM RICHARDSON of *Salisbury-court, Fleet-street*: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to publish and vend, and to cause to be published and vended, the said Nautical Almanacs or Astronomical Ephemerides, together with the other useful Tables above-mentioned. For which this shall be your Warrant. Given under our Hands and Seals the 1st Day of *March* 1777.

To Mr. JOHN NOURSE,
Bookseller in the *Strand*.

SANDWICH (L.S.)
FL. NORTON (L.S.)
C. KNOWLES (L.S.)
C. HARDY (L.S.)
J. PRINGLE (L.S.)
N. MASKELYNE (L.S.)
T. HORNSBY (L.S.)
J. SMITH (L.S.)
E. WARING (L.S.)
A. SHEPHERD (L.S.)
PH. STEPHENS (L.S.)
M. SUCKLING (L.S.)
J. SMITH (L.S.)

By Order of the Commissioners,

JOHN IBBETSON, Secretary.

✍ A Licence was also granted at the same Time, to the like Effect, to Mess JOHN MOUNT and THOMAS PAGE, Stationers on *Tower-hill*.

P R E

P R E F A C E.

THE Commissioners of Longitude, in pursuance of the Powers vested in them by Act of Parliament, present the Publick with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1780, being the Fourteenth Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Publick in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER of Gottingen to a sufficient Exactness to determine the Longitude at Sea, within a Degrée, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculus; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published among the Tables
requisite

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requisite to be used with the EPHEMERIS; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL; but still more so by the GENERAL TABLES for correcting the apparent Distance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commissioners of Longitude, and published under the Care of Dr. SHEPHERD, Plumian Professor of Astronomy and experimental Philosophy at CAMBRIDGE, in 1772.

By Desire of the Commissioners of Longitude, I drew up the Explanation and Use of the Articles contained in the EPHEMERIS, and the Instructions, with Examples, for finding the Longitude at Sea by the Help of the same. I also collected and calculated the Sixteen First Pages of Tables requisite to be used with the EPHEMERIS, and computed the Table of proportional Logarithms, which seemed to me absolutely necessary to clear this Method of any remaining Difficulty; and added Explanations of all the Tables, and a Correction, p. 49 and 50, which may be applied by the Curious to the Effect of Refraction on the Moon's Distance from a Star, found by Mr. LYONS, or any other Method, on account of the Barometer and Thermometer.

All the Calculations of the EPHEMERIS relating to the Sun were made from Mr. MAYER's last manuscript Tables, received by the Board of Longitude after his Decease, which have been printed under my Inspection, and published
in

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in 1770; but the Calculations of the Moon were made in this EPHEMERIS, for the fourth time, from new Tables, improved from MAYER's Tables, composed by Mr. CHARLES MASON, under my Direction, from Calculations made by Order of the Board of Longitude, upon the Series of lunar Observations made by the late Dr. BRADLEY, and published in the Nautical Almanac of 1774. In these new Tables, the Epoch of the Moon's mean Longitude is $1''$ less, that of the Apogee is $56''$ less, and that of the Ascending Node $45''$ more, than in MAYER's printed Tables, and the Equations are calculated to Tenths of a Second. Moreover, One new Equation is introduced, whose Argument is the mean Distance of the Moon from the Sun's Apogee, and Maximum $16'',4$. These new Tables, when compared with the above-mentioned Series of Observations, a proper Allowance being made for the unavoidable Error of Observation, seem to give always the Moon's Longitude in the Heavens correctly within 45 Seconds of a Degree; which greatest Error, added to a possible Error of One Minute in taking the Moon's Distance from the Sun or a Star at Sea, will at a Medium only produce an Error of 50 Minutes of Longitude.

The Calculations of the Planets, and of the Eclipses of Jupiter's Satellites were calculated from the Tables of Mr. WARGENTIN, annexed to M. DE LA LANDE's Astronomy.

All the Articles of the EPHEMERIS were computed by Two separate Persons, and examined by a Third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which, for Noon, were computed by One Person,

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Person, and for Midnight by another, and the Truth of these Calculations ascertained by means of Differences, which, for the Moon's Longitude, were carried as far as the Fourth Order.

NEVIL MASKELYNE,
ASTRONOMER ROYAL.

GREENWICH,
MAY 3,
1777.

EXPLA-

EXPLANATION of the Characters used in the EPHEMERIS.

The PLANETS, &c.

- | | |
|---|-----------|
| ☉ The Sun. | ♂ Mars. |
| ☾ The Moon. | ♃ Jupiter |
| ☿ Mercury. | ♄ Saturn. |
| ♀ Venus. | |
| ♌ The Moon's, or any other Planet's Ascending Node. | |
| ♍ The Descending Node. | |
| ♊ Conjunction, or Planets situated in the same Longitude. | |
| ♋ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other. | |

Signs of the Zodiac.

- | | |
|--------------|-------------------|
| S. | S. |
| 0. ♈ Aries. | 6. ♎ Libra. |
| 1. ♉ Taurus. | 7. ♏ Scorpio. |
| 2. ♊ Gemini. | 8. ♐ Sagittarius. |
| 3. ♋ Cancer. | 9. ♑ Capricornus. |
| 4. ♌ Leo. | 10. ♒ Aquarius. |
| 5. ♍ Virgo. | 11. ♓ Pisces. |

ECLIPSES for the YEAR 1780.

May 4. ☉ eclipsed, invifible:

♂ at 0^h. 55'. in 1st. 14°. 34'. ☽'s Lat. 45'. 43'' S.

☉ centrally eclipsed on the Meridian at 0^h. 26'. in
Long. 6°. 30' W. Lat. 44°. 7' South.

May 17. ☽ eclipsed, invifible:

H. M. S.

Beginning of the Eclipse — 17. 21. 25

Middle — — — 17. 23. 2

End — — — 18. 0. 39

Digits eclipsed 11'. 30'' on the ☽'s North Limb.

Nov. 11. ☽ eclipsed, vifible:

H. M.

Beginning of Eclipse — — 15. 6½

Middle — — — 16. 33

End — — — 17. 59½

Digits eclipsed 7°. 30'. on the ☽'s Southern Limb.

Obliquity

OBLIQUITY, &c.

1780. Obliquity of the Ecliptic. Equat. of Equin. Points.

	D.	M.	S.	S.
Jan. 1. —————	23.	28.	9,0	— 15,6
Apr. 1. —————	23.	28.	9,6	— 14,8
July 1. —————	23.	28.	10,1	— 13,8
Oct. 1. —————	23.	28.	10,6	— 12,8
Dec. 31. —————	23.	28.	11,0	— 11,7

I. JANUARY 1780. [1]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
1	Sa.	Circumcision.	New Moon —	6. 4. 49
2	Su.	Sunday after Circumcision.	First Quarter —	14. 9. 14
3	M.		Full Moon —	21. 6. 41
4	Tu.		Last Quarter —	27. 22. 50
5	W.		D. Other Phenomena.	
6	Th.	Epiphany.	2. ☾ ♄ 0 ^h . 0'.	
7	F.	Lucian.	☾ ♄ 5 ^h . 12'.	
8	Sa.		☾ ♄ 10 ^h . 25'.	
9	Su.	1 st Sunday after Epiphany.	3. ☾ ☿ Ophiuchi 21 ^h . 46'.	
10	M.		☾ ☿ Ophiuchi 23 ^h . 36'.	
11	Tu.		4. ☿ ♄ diff. Lat. 29'.	
12	W.		8. ☾ ♄ 19 ^h . 22'.	
13	Th.	Hil. Camb. Ter. begins.	11. ☾ ♄ 1 ^h . 0'.	
14	F.	Oxford Term begins.	☾ ♄ 1 ^h . 8'.	
15	Sa.		☿ ☿ diff. Lat. 16'.	
16	Su.	2 ^d Sunday after Epiphany.	☿ Stationary.	
17	M.		12. ☾ ♄ 1 ^h . 28'.	
18	Tu.	2. Charlotte's Birth-day	18. ☾ ♄ 16 ^h . 8'.	
19	W.	[kept. Prisca.	☾ ♄ 19 ^h . 32'.	
20	Th.	Fabian. In 8 days of St.	19. ☾ ♄ 16 ^h . 33 ¹ / ₂ .*	
21	F.	Agnes. [Hil. 1 ret.	15' N. of ☿'s center.	
22	Sa.	Vincent.	Em. 16 ^h . 56'.* 14 ¹ / ₂ N.	
23	Su.	Septuagesima Sunday.	☿ enters ☿ at 20 ^h . 23'.	
24	M.	Hilary Term begins.	20. ☾ ♄ 13 ^h . 37'.	
25	Tu.	Conversion of St. Paul.	☾ ♄ 22 ^h . 24'.	
26	W.		22. ☿ ☿ diff. Lat. 30'.	
27	Th.	Pr. Aug. Fred. born. From	☾ ♄ 19 ^h . 18'.	
28	F.	[S. Hil. in 15 days 2 ret.	24. ☾ ♄ 2 ^h . 35'.	
29	Sa.		25. ☾ ♄ 4 ^h . 33'.	
30	Su.	Sexagesima-Sun. K.Ch. I.	☾ ♄ 16 ^h . 0'.	
31	M.	[martyr.	☿ ☿ diff. Lat. 24'.	
			27. ☾ ♄ 2 ^h . 19'.	
			☾ ♄ 10 ^h . 28'.	
			☾ ♄ 14 ^h . 55'.	
			28. ☾ ♄ 5 ^h . 48'.	
			29. ☾ ♄ 5 ^h . 32'.	
			☾ ♄ 10 ^h . 41'.	
			☾ ♄ 15 ^h . 53'.	
			31. ☾ ☿ Ophiuchi 3 ^h . 18'.	
			☾ ☿ Ophiuchi 5 ^h . 9'.	

[2]		J A N U A R Y 1780.				II.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Sa.	9. 10. 47. 28	18. 46. 57, 3	23. 1. 49	3. 59, 9	28, 4
2	Su.	9. 11. 48. 41	18. 51. 22, 3	22. 56. 38	4. 28, 3	28, 0
3	M.	9. 12. 49. 53	18. 55. 46, 9	22. 50. 59	4. 56, 3	27, 5
4	Tu.	9. 13. 51. 5	19. 0. 11, 1	22. 44. 53	5. 23, 8	27, 2
5	W.	9. 14. 52. 17	19. 4. 34, 9	22. 38. 20	5. 51, 0	26, 7
6	Th.	9. 15. 53. 29	19. 8. 58, 3	22. 31. 20	6. 17, 7	26, 3
7	F.	9. 16. 54. 41	19. 13. 21, 2	22. 23. 52	6. 44, 0	25, 8
8	Sa.	9. 17. 55. 53	19. 17. 43, 6	22. 15. 59	7. 9, 8	25, 2
9	Su.	9. 18. 57. 4	19. 22. 5, 6	22. 7. 40	7. 35, 0	24, 7
10	M.	9. 19. 58. 15	19. 26. 26, 9	21. 58. 54	7. 59, 7	24, 1
11	Tu.	9. 20. 59. 25	19. 30. 47, 6	21. 49. 43	8. 23, 8	23, 4
12	W.	9. 22. 0. 34	19. 35. 7, 6	21. 40. 7	8. 47, 2	22, 8
13	Th.	9. 23. 1. 42	19. 39. 27, 1	21. 30. 5	9. 10, 0	22, 2
14	F.	9. 24. 2. 49	19. 43. 45, 8	21. 19. 39	9. 32, 2	21, 4
15	Sa.	9. 25. 3. 55	19. 48. 3, 8	21. 8. 48	9. 53, 6	20, 7
16	Su.	9. 26. 5. 1	19. 52. 21, 2	20. 57. 32	10. 14, 3	20, 0
17	M.	9. 27. 6. 6	19. 56. 37, 8	20. 45. 53	10. 34, 3	19, 3
18	Tu.	9. 28. 7. 9	20. 0. 53, 7	20. 33. 50	10. 53, 6	18, 6
19	W.	9. 29. 8. 12	20. 5. 8, 9	20. 21. 24	11. 12, 2	17, 8
20	Th.	10. 0. 9. 13	20. 9. 23, 3	20. 8. 35	11. 30, 0	17, 0
21	F.	10. 1. 10. 14	20. 13. 36, 9	19. 55. 24	11. 47, 0	16, 3
22	Sa.	10. 2. 11. 14	20. 17. 49, 8	19. 41. 51	12. 3, 3	15, 4
23	Su.	10. 3. 12. 13	20. 22. 1, 8	19. 27. 56	12. 18, 7	14, 7
24	M.	10. 4. 13. 11	20. 26. 13, 1	19. 13. 39	12. 33, 4	13, 8
25	Tu.	10. 5. 14. 8	20. 30. 23, 5	18. 59. 0	12. 47, 2	13, 1
26	W.	10. 6. 15. 5	20. 34. 33, 2	18. 44. 1	13. 0, 3	12, 4
27	Th.	10. 7. 16. 1	20. 38. 42, 2	18. 28. 4	13. 12, 7	11, 6
28	F.	10. 8. 16. 57	20. 42. 50, 4	18. 13. 2	13. 24, 3	10, 7
29	Sa.	10. 9. 17. 51	20. 46. 57, 6	17. 57. 3	13. 35, 0	9, 9
30	Su.	10. 10. 18. 45	20. 51. 4, 2	17. 40. 44	13. 44, 9	9, 1
31	M.	10. 11. 19. 38	20. 55. 9, 8	17. 24. 7	13. 54, 0	

III. J A N U A R Y 1780. [3]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 19, 2	1. 10, 9	2. 32, 9	9. 992656	2. 0. 3
7	16. 19, 1	1. 10, 6	2. 32, 9	9. 992727	1. 29. 44
13	16. 18, 9	1. 10, 1	2. 32, 8	9. 992853	1. 29. 25
19	16. 18, 3	1. 9, 5	2. 32, 6	9. 993055	1. 29. 6
25	16. 17, 6	1. 8, 9	2. 32, 4	9. 993357	1. 28. 47

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	9. 29. 44	1	6. 22. 24	7.	21. 59. 34 I
4	3. 57. 14	4	19. 37. 18	8	0. 5. 44 E
5	22. 24. 48	8	8. 52. 21	15	1. 54. 39 I
7	16* 52. 23	11	22. 7. 27	15	3. 59. 43 E
9	11. 19. 58	15	11. 22. 43	22	5. 50. 18 I
11	5. 47. 35	19	0. 38. 0	22	7. 54. 17 E
13	0. 15. 15	22	13* 53. 31	29	9. 46. 39 I
14	18* 42. 56	26	3. 9. 8	29	11. 49. 30 E
16	13. 10. 43	29	16* 24. 55	IV. Satellite. Conj.	
18	7. 38. 27				
20	2. 6. 17				
21	20. 34. 10				
23	15* 2. 2				
25	9. 29. 59				
27	3. 57. 59				
28	22. 26. 1			2	8. 59 Sup.
30	16* 54. 5			10	18* 8 Inf.
				19	3. 0 Sup.
				27	11. 50 Inf.

[4] J A N U A R Y 1780. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lat- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lat- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
M E R C U R Y. Greatest Elongation 22 ^d .						
1	3. 19. 26	6. 17 N	9. 6. 45	2. 57 N	20. 20 S	23. 33
4	4. 6. 46	6. 55	9. 3. 16	3. 16	20. 9	23. 7
7	4. 22. 45	6. 57	9. 1. 4	3. 15	20. 13	22. 46
10	5. 7. 18	6. 31	9. 0. 19	2. 59	20. 28	22. 32
13	5. 20. 29	5. 46	9. 0. 53	2. 35	20. 53	22. 22
16	6. 2. 29	4. 48	9. 2. 26	2. 6	21. 20	22. 17
19	6. 13. 30	3. 45	9. 4. 45	1. 36	21. 46	22. 15
22	6. 23. 42	2. 38	9. 7. 37	1. 7	22. 8	22. 15
25	7. 3. 15	1. 31	9. 10. 54	0. 38	22. 24	22. 18
28	7. 12. 19	0. 25 N	9. 14. 30	0. 10 N	22. 30	22. 21
31	7. 21. 0	0. 39 S	9. 18. 22	0. 15 S	22. 28	22. 26
V E N U S.						
1	10. 22. 40	3. 8 S	9. 28. 27	1. 26 S	21. 53 S	1. 16
7	11. 2. 11	3. 18	10. 5. 59	1. 31	20. 16	1. 21
13	11. 11. 41	3. 23	10. 13. 28	1. 34	18. 18	1. 26
19	11. 21. 13	3. 21	10. 20. 56	1. 34	16. 2	1. 30
25	0. 0. 45	3. 15	10. 28. 26	1. 33	13. 30	1. 34
M A R S.						
1	0. 11. 10	1. 7 S	11. 6. 6	0. 55 S	10. 8 S	3. 46
7	0. 14. 48	1. 1	11. 10. 41	0. 50	8. 19	3. 37
13	0. 18. 27	0. 55	11. 15. 11	0. 44	6. 30	3. 27
19	0. 22. 3	0. 48	11. 19. 44	0. 38	4. 39	3. 18
25	0. 25. 36	0. 42	11. 24. 16	0. 32	2. 46	3. 9
J U P I T E R. 16 ^d . 20.						
1	6. 14. 38	1. 19 N	6. 24. 43	1. 16 N	8. 24 S	18. 43
7	6. 15. 6	1. 19	6. 25. 23	1. 18	8. 37	18. 20
13	6. 15. 33	1. 19	6. 25. 56	1. 19	8. 48	17. 56
19	6. 16. 0	1. 19	6. 26. 23	1. 21	8. 56	17. 32
25	6. 16. 27	1. 18	6. 26. 45	1. 22	9. 3	17. 8
S A T U R N.						
1	8. 0. 57	1. 57 N	8. 4. 18	1. 48 N	19. 15 S	21. 20
7	8. 1. 8	1. 56	8. 4. 55	1. 49	19. 21	20. 56
13	8. 1. 19	1. 56	8. 5. 29	1. 49	19. 27	20. 32
19	8. 1. 30	1. 56	8. 6. 1	1. 50	19. 32	20. 9
25	8. 1. 41	1. 55	8. 6. 31	1. 50	19. 37	19. 46

V. JANUARY 1780. [5]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sa.	7. 11. 59. 34	7. 18. 22. 19	1. 45. 17 N	1. 11. 58 N
2	Su.	7. 24. 41. 23	8. 0. 57. 11	0. 38. 9 N	0. 4. 10 N
3	M.	8. 7. 10. 1	8. 13. 20. 14	0. 29. 33 S	1. 2. 40 S
4	Tu.	8. 19. 28. 8	8. 25. 33. 56	1. 34. 47	2. 5. 36
5	W.	9. 1. 37. 54	9. 7. 40. 13	2. 34. 46	3. 1. 58
6	Th.	9. 13. 41. 6	9. 19. 40. 40	3. 27. 6	3. 49. 45
7	F.	9. 25. 39. 7	10. 1. 36. 36	4. 9. 47	4. 26. 59
8	Sa.	10. 7. 33. 16	10. 13. 29. 20	4. 41. 14	4. 52. 24
9	Su.	10. 19. 25. 2	10. 25. 20. 37	5. 0. 24	5. 5. 8
10	M.	11. 1. 16. 21	11. 7. 12. 36	5. 6. 36	5. 4. 44
11	Tu.	11. 13. 9. 42	11. 19. 8. 7	4. 59. 37	4. 51. 9
12	W.	11. 25. 8. 15	0. 1. 10. 41	4. 39. 29	4. 24. 36
13	Th.	0. 7. 15. 48	0. 13. 24. 24	4. 6. 38	3. 45. 39
14	F.	0. 19. 36. 51	0. 25. 53. 49	3. 21. 47	2. 55. 14
15	Sa.	1. 2. 15. 51	1. 8. 43. 32	2. 26. 6	1. 54. 44
16	Su.	1. 15. 17. 23	1. 21. 57. 47	1. 21. 20	0. 46. 17 S
17	M.	1. 28. 45. 22	2. 5. 40. 11	0. 10. 0 S	0. 27. 2 N
18	Tu.	2. 12. 42. 20	2. 19. 51. 48	1. 4. 17 N	1. 41. 6
19	W.	2. 27. 8. 21	3. 4. 31. 25	2. 16. 53	2. 50. 50
20	Th.	3. 12. 0. 18	3. 19. 34. 0	3. 22. 16	3. 50. 26
21	F.	3. 27. 11. 21	4. 4. 50. 59	4. 14. 42	4. 34. 28
22	Sa.	4. 12. 31. 29	4. 20. 11. 18	4. 49. 20	4. 58. 56
23	Su.	4. 27. 49. 3	5. 5. 23. 17	5. 3. 11	5. 2. 2
24	M.	5. 12. 52. 54	5. 20. 16. 55	4. 55. 42	4. 44. 27
25	Tu.	5. 27. 34. 34	6. 4. 45. 18	4. 28. 43	4. 8. 56
26	W.	6. 11. 48. 55	6. 18. 45. 16	3. 45. 37	3. 19. 21
27	Th.	6. 25. 34. 30	7. 2. 16. 51	2. 50. 37	2. 19. 59
28	F.	7. 8. 52. 42	7. 15. 22. 27	1. 47. 58	1. 15. 0
29	Sa.	7. 21. 46. 42	7. 28. 5. 54	0. 41. 34 N	0. 8. 2 N
30	Su.	8. 4. 20. 40	8. 10. 31. 34	0. 25. 9 S	0. 57. 43 S
31	M.	8. 16. 39. 8	8. 22. 43. 51	1. 29. 12	1. 59. 26

[6] J A N U A R Y 1780. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	26	20. 32	220. 6	226. 15	13. 46 S	16. 10 S
2	Su.	27	21. 20	232. 29	238. 49	18. 21	20. 19
3	M.	28	22. 10	245. 15	251. 47	22. 1	23. 28
4	Tu.	29	23. 0	258. 24	265. 5	24. 37	25. 29
5	W.	30	23. 51	271. 49	278. 33	26. 2	26. 16
6	Th.	1	0	285. 16	291. 55	26. 12	25. 49
7	F.	2	0. 42	298. 29	304. 56	25. 8	24. 10
8	Sa.	3	1. 30	311. 16	317. 28	22. 55	21. 27
9	Su.	4	2. 16	323. 30	329. 25	19. 46	17. 53
10	M.	5	2. 59	335. 12	340. 52	15. 48	13. 35
11	Tu.	6	3. 41	346. 26	351. 56	11. 14	8. 46
12	W.	7	4. 22	357. 24	2. 50	6. 12	3. 34 S
13	Th.	8	5. 2	8. 17	13. 48	0. 53 S	1. 50 N
14	F.	9	5. 44	19. 23	25. 5	4. 34 N	7. 18
15	Sa.	10	6. 28	30. 55	36. 58	9. 59	12. 37
16	Su.	11	7. 15	43. 14	49. 45	15. 9	17. 32
17	M.	12	8. 8	56. 33	63. 40	19. 44	21. 43
18	Tu.	13	9. 6	71. 6	78. 50	23. 24	24. 46
19	W.	14	10. 8	86. 49	95. 2	25. 43	26. 14
20	Th.	15	11. 13	103. 23	111. 48	26. 17	25. 50
21	F.	16	12. 18	120. 10	128. 24	24. 54	23. 31
22	Sa.	17	13. 20	136. 27	144. 16	21. 41	19. 30
23	Su.	18	14. 17	151. 49	159. 7	16. 59	14. 13
24	M.	19	15. 10	166. 9	172. 58	11. 17	8. 12
25	Tu.	20	15. 59	179. 34	186. 1	5. 4 N	1. 55 N
26	W.	21	16. 47	192. 20	198. 34	1. 13 S	4. 17 S
27	Th.	22	17. 33	204. 45	210. 54	7. 15	10. 5
28	F.	23	18. 20	217. 4	223. 17	12. 46	15. 16
29	Sa.	24	19. 8	229. 33	235. 52	17. 34	19. 38
30	Su.	25	19. 58	242. 17	248. 46	21. 27	23. 0
31	M.	26	20. 49	255. 20	261. 58	24. 16	25. 15

VII. JANUARY 1780. [7]

Days of the Month.	Days of the Week.	Semidr. ☽ at Noon.	Semidr. ☽ at Mid-night.	Hor. Par. ☽ at Noon.	Hor. Par. ☽ at Midnight.	Propor. Lo-ear. at Noon.	Propor. Lo-ear. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Sa.	15. 25	15. 20	56. 36	56. 18	5025	5048
2	Su.	15. 16	15. 12	56. 1	55. 45	5069	5090
3	M.	15. 8	15. 4	55. 30	55. 17	5110	5127
4	Tu.	15. 1	14. 58	55. 5	54. 54	5142	5157
5	W.	14. 55	14. 52	54. 44	54. 35	5170	5182
6	Th.	14. 50	14. 48	54. 27	54. 20	5193	5202
7	F.	14. 47	14. 46	54. 14	54. 10	5210	5215
8	Sa.	14. 45	14. 44	54. 7	54. 5	5219	5222
9	Su.	14. 44	14. 45	54. 5	54. 7	5222	5219
10	M.	14. 46	14. 47	54. 10	54. 15	5215	5209
11	Tu.	14. 49	14. 51	54. 22	54. 31	5199	5187
12	W.	14. 55	14. 58	54. 43	54. 57	5171	5153
13	Th.	15. 3	15. 8	55. 13	55. 32	5132	5107
14	F.	15. 14	15. 20	55. 53	56. 16	5080	5050
15	Sa.	15. 27	15. 34	56. 41	57. 8	5018	4984
16	Su.	15. 42	15. 50	57. 37	58. 6	4947	4911
17	M.	15. 58	16. 6	58. 35	59. 4	4875	4839
18	Tu.	16. 14	16. 21	59. 33	60. 1	4804	4770
19	W.	16. 28	16. 34	60. 26	60. 48	4740	4714
20	Th.	16. 39	16. 43	61. 6	61. 21	4692	4675
21	F.	16. 45	16. 47	61. 30	61. 35	4664	4658
22	Sa.	16. 47	16. 45	61. 34	61. 29	4659	4665
23	Su.	16. 42	16. 38	61. 19	61. 4	4677	4694
24	M.	16. 33	16. 27	60. 45	60. 23	4717	4743
25	Tu.	16. 21	16. 14	59. 59	59. 33	4772	4804
26	W.	16. 6	15. 59	59. 6	58. 38	4837	4871
27	Th.	15. 51	15. 44	58. 10	57. 44	4906	4938
28	F.	15. 37	15. 30	57. 17	56. 52	4972	5004
29	Sa.	15. 23	15. 17	56. 28	56. 6	5035	5063
30	Su.	15. 12	15. 7	55. 46	55. 28	5089	5112
31	M.	15. 3	14. 59	55. 12	54. 58	5133	5152

[8] J A N U A R Y 1780. VIII.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	58. 48. 54	57. 20. 24	55. 52. 8	54. 24. 7
2		47. 7. 30	45. 40. 50	44. 14. 23	42. 48. 8
8	z Arietis.	87. 53. 44	86. 26. 56	85. 0. 11	83. 33. 29
9		76. 20. 41	74. 54. 15	73. 27. 51	72. 1. 30
10		64. 50. 14	63. 24. 4	61. 57. 55	60. 31. 48
11		53. 21. 38			
11	Aldeba- ran.	83. 7. 43	81. 39. 4	80. 10. 20	78. 41. 30
12		71. 15. 34	69. 45. 59	68. 16. 14	66. 46. 20
13		59. 14. 17	57. 43. 16	56. 12. 2	54. 40. 34
14		46. 59. 53	45. 27. 0	43. 53. 53	42. 20. 30
15		34. 29. 51	32. 54. 57	31. 19. 52	29. 44. 37
16		21. 46. 37			
16	Pollux.	65. 15. 40	63. 36. 1	61. 55. 56	60. 15. 23
17		51. 45. 56	50. 2. 42	48. 19. 2	46. 34. 54
18		37. 47. 45			
18	Regulus.	74. 3. 50	72. 17. 9	70. 30. 2	68. 42. 28
19		59. 38. 32	57. 48. 35	55. 58. 18	54. 7. 41
20		44. 50. 0	42. 57. 41	41. 5. 13	39. 12. 34
21		29. 47. 49	27. 54. 52	26. 2. 4	24. 9. 26
22	Spica μ	68. 31. 32	66. 37. 24	64. 43. 23	62. 49. 29
23		53. 22. 22	51. 29. 37	49. 37. 10	47. 45. 1
24		38. 29. 21	36. 39. 24	34. 49. 57	33. 0. 59
25		24. 4. 35			
25	Antares.	69. 37. 27	67. 49. 38	66. 2. 14	64. 15. 15
26		55. 26. 46	53. 42. 24	51. 58. 29	50. 15. 0
27		41. 44. 11	40. 3. 27	38. 22. 58	36. 43. 3
28		28. 30. 2			
26	The Sun.	114. 22. 48	112. 46. 5	111. 9. 47	109. 33. 53
27		101. 40. 38	100. 7. 13	98. 34. 12	97. 1. 35
28		89. 24. 16	87. 53. 56	86. 23. 57	84. 54. 19
29		77. 31. 12	76. 3. 33	74. 36. 12	73. 9. 9
30		65. 58. 8	64. 32. 43	63. 7. 33	61. 42. 37
31		54. 41. 19	53. 17. 42	51. 54. 17	50. 31. 3
F. 1		43. 37. 35			

IX. JANUARY 1780. [9]

Distances of ☿'s Center from ☉, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	52. 56. 20	51. 28. 47	50. 1. 28	48. 34. 23
2		41. 22. 6	39. 56. 17		
8	♈ Arietis.	82. 6. 50	80. 40. 14	79. 13. 40	77. 47. 9
9		70. 35. 11	69. 8. 54	67. 42. 39	66. 16. 26
10		59. 5. 42	57. 39. 38	56. 13. 36	54. 47. 36
11	♈ Aldebaran.	77. 12. 33	75. 43. 30	74. 14. 19	72. 45. 0
12		65. 16. 17	63. 46. 4	62. 15. 40	60. 45. 4
13		53. 8. 54	51. 37. 0	50. 4. 52	48. 32. 30
14		40. 46. 53	39. 12. 59	37. 38. 51	36. 4. 28
15		28. 9. 12	26. 33. 40	24. 58. 3	23. 22. 21
16	♊ Pollux.	58. 34. 24	56. 52. 57	55. 11. 4	53. 28. 43
17		44. 50. 21	43. 5. 21	41. 19. 56	39. 34. 3
18	♋ Regulus.	66. 54. 29	65. 6. 5	63. 17. 17	61. 28. 6
19		52. 16. 43	50. 25. 26	48. 33. 53	46. 42. 4
20		37. 19. 46	35. 26. 49	33. 33. 50	31. 40. 50
21		22. 16. 57			
21	♋ Spica ♀	76. 8. 39	74. 14. 19	72. 20. 1	70. 25. 45
22		60. 55. 42	59. 2. 3	57. 8. 37	55. 15. 25
23		45. 53. 10	44. 1. 39	42. 10. 30	40. 19. 44
24		31. 12. 30	29. 24. 36	27. 37. 18	25. 50. 37
25	♋ Antares.	62. 28. 41	60. 42. 33	58. 56. 51	57. 11. 36
26		48. 31. 57	46. 49. 20	45. 7. 11	43. 25. 28
27		35. 3. 33	33. 24. 30	31. 45. 54	30. 7. 45
25	The Sun.	120. 53. 55	119. 15. 30	117. 37. 31	115. 59. 57
26		107. 58. 25	106. 23. 22	104. 48. 42	103. 14. 28
27		95. 29. 22	93. 57. 32	92. 26. 4	90. 54. 59
28		83. 25. 3	81. 56. 6	80. 27. 29	78. 59. 11
29		71. 42. 24	70. 15. 56	68. 49. 45	67. 23. 48
30		60. 17. 55	58. 53. 27	57. 29. 11	56. 5. 9
31		49. 8. 1	47. 45. 9	46. 22. 27	44. 59. 56

[10] J A N U A R Y 1780. X.

Distances of Δ s Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica α	21. 33. 23	23. 6. 48	24. 40. 15	26. 13. 45
2		34. 1. 14	35. 34. 32	37. 7. 45	38. 40. 51
3		46. 24. 38	47. 57. 0	49. 29. 15	51. 1. 23
4		58. 40. 12	60. 11. 35	61. 42. 51	63. 13. 58
10	The Sun.	41. 33. 37	42. 54. 14	44. 14. 55	45. 35. 39
11		52. 20. 26	53. 41. 38	55. 2. 57	56. 24. 23
12		63. 13. 27	64. 35. 42	65. 58. 8	67. 20. 44
13		74. 16. 35	75. 40. 25	77. 4. 31	78. 28. 51
14		85. 34. 29	87. 0. 28	88. 26. 46	89. 53. 23
15		97. 11. 32	98. 40. 14	100. 9. 19	101. 38. 46
16		109. 12. 2	110. 43. 54	112. 16. 12	113. 48. 56
15	Fomalhaut.	62. 37. 15	64. 9. 8	65. 41. 31	67. 14. 22
16		75. 5. 48	76. 41. 30	78. 17. 40	79. 54. 19
17		88. 4. 38			
17	α Arietis.	26. 5. 44	27. 37. 21	29. 10. 27	30. 44. 59
18		38. 55. 36	40. 36. 44	42. 18. 38	44. 1. 21
19		52. 45. 13			
19	Aldebaran.	21. 49. 40	23. 36. 4	25. 23. 16	27. 11. 13
20		36. 20. 33	38. 11. 55	40. 3. 38	41. 55. 43
21		51. 20. 20	53. 13. 52	55. 7. 33	57. 1. 22
22		66. 31. 13	68. 25. 10	70. 19. 3	72. 12. 50
23		81. 39. 54			
23	Pollux.	37. 27. 33	39. 20. 41	41. 13. 37	43. 6. 19
24		52. 25. 51	54. 16. 49	56. 7. 26	57. 57. 42
25		67. 3. 31			
25	Regulus.	31. 1. 35	32. 48. 28	34. 35. 3	36. 21. 17
26		45. 7. 19	46. 51. 24	48. 35. 5	50. 18. 24
27		58. 49. 1	60. 29. 57	62. 10. 29	63. 50. 39
28		72. 5. 51			
28	Spica α	18. 30. 19	20. 4. 55	21. 39. 35	23. 14. 18
29		31. 7. 16	32. 41. 27	34. 15. 26	35. 49. 16
30		43. 35. 26	45. 8. 4	46. 40. 30	48. 12. 45
31		55. 51. 13	57. 22. 23	58. 53. 24	60. 24. 16
F. 1		67. 56. 22			

XI. JANUARY 1780. [11]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica μ	27. 47. 18	29. 20. 51	30. 54. 21	32. 27. 49
2		40. 13. 52	41. 46. 44	43. 19. 30	44. 52. 7
3		52. 33. 23	54. 5. 16	55. 37. 2	57. 8. 41
4		64. 44. 59			
10	The Sun.	46. 56. 27	48. 17. 19	49. 38. 17	50. 59. 19
11		57. 45. 55	59. 7. 35	60. 29. 24	61. 51. 21
12		68. 43. 30	70. 6. 27	71. 29. 37	72. 53. 0
13		79. 53. 26	81. 18. 17	82. 43. 24	84. 8. 48
14		91. 20. 20	92. 47. 37	94. 15. 14	95. 43. 13
15		103. 8. 37	104. 38. 51	106. 9. 30	107. 40. 33
16		115. 22. 5	116. 55. 41	118. 29. 44	120. 4. 16
14	Fomalhaut.	56. 34. 35	58. 4. 31	59. 34. 56	61. 5. 51
15		68. 47. 42	70. 21. 31	71. 55. 48	73. 30. 34
16		81. 31. 26	83. 9. 1	84. 47. 5	86. 25. 37
17	α Arietis.	32. 20. 49	33. 57. 53	35. 36. 6	37. 15. 20
18		45. 44. 48	47. 28. 58	49. 13. 47	50. 59. 13
19	Aldebaran.	28. 59. 54	30. 49. 13	32. 39. 8	34. 29. 36
20		43. 48. 8	45. 40. 50	47. 33. 47	49. 26. 58
21		58. 55. 14	60. 49. 12	62. 43. 12	64. 37. 12
22		74. 6. 33	76. 0. 7	77. 53. 33	79. 46. 49
23	Pollux.	44. 58. 47	46. 50. 59	48. 42. 54	50. 34. 32
24		59. 47. 37	61. 37. 10	63. 26. 20	65. 15. 7
25	Regulus.	38. 7. 12	39. 52. 46	41. 37. 59	43. 22. 50
26		52. 1. 19	53. 43. 51	55. 25. 57	57. 7. 42
27		65. 30. 26	67. 9. 50	68. 48. 52	70. 27. 32
28	Spica μ	24. 49. 1	26. 23. 43	27. 58. 20	29. 32. 51
29		37. 22. 54	38. 56. 20	40. 29. 34	42. 2. 36
30		49. 44. 48	51. 16. 40	52. 48. 21	54. 19. 52
31		61. 54. 58	63. 25. 31	64. 55. 56	66. 26. 13

[12] JANUARY 1780. XII.

Configurations of the SATELLITES of JUPITER
at 6 o' th' Clock in the Morning.

1	I●			○	3.	2.	4.
2		3.	2.	○	.1	4.	
3		3.	.2	○	1.4.		
4		4.	.3	○	.1	.2	
5		4.	.1	○	.3	2.	
6	4.		2.	○	1.		.3
7	.4		.1	○			3.
8	.4			○	3.	2.	I●
9		.4	3.	○	.1		
10		3.	.4	○	2.	1.	
11	4.0		.3	○	.1	.2	
12	3.0		1.	○	2.	.4	
13			2.	○	1.	.3	.4
14			.1	○	.2		.4
15				○	1.	3.	2.
16	I,0		3.	○	2.		4.
17		3.	.2	○	1.		4.
18		.3		○	.1	.2	4.
19			1.	○	.3	4.2.	
20		2.	4.	○	1.	.3	
21		4.	.1	○	.2		3.
22	4.			○	1.	3.	.2
23	4.		3.	○	.1		2●
24	.4	3.	.2	○			I●
25	.4	.3		○	.1	.2	
26		4.	.3	○	2.		
27		.4	2.	○	.1	.3	
28		.1	.2	○	.4		.3
29				○	1.	.2	.4
30	2●		.3	○	3.		.4
31	I●		3.	○	.2		.4

I. FEBRUARY 1780. [13]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
1	Tu.		D. H. M.
2	W.	<i>Purif. of B.V. Mary.</i>	New Moon — 4. 23. 57
3	Th.	Blas. On mor. of Purif.	First Quarter — 13. 0. 27
4	F.	[3 ret.]	Full Moon — 19. 16. 46
5	Sa.	Agatha.	Last Quarter — 26. 14. 0
6	Su.	<i>Quinquages. or Shrove Sund.</i>	Other Phenomena.
7	M.		D.
8	Tu.		1. ☾ λ 8 ^h . 56 ^l .
9	W.	<i>Ash Wednesday. In 8 days</i>	☾ σ 21 ^h . 5 ^l .
10	Th.	[of Purif. 4 ret.]	☾ φ 16 ^h . 9 ^l .
11	F.		5. ☾ ε 1 ^h . 25 ^l .
12	Sa.	Term ends.	16. ☾ ε II 2 ^h . 12 ^l .
13	Su.	<i>1st Sunday in Lent.</i>	17. ☾ γ 22 ^h . 47 ^l .
14	M.	Valentine.	18. ☉ enters ♎ 11 ^h . 15 ^l .
15	Tu.		19. ☾ η 6 ^h . 44 ^l .
16	W.		21. ☾ c 14 ^h . 50 ^l .
17	Th.		22. ☾ γ 1 ^h . 9 ^l .
18	F.		23. ☾ κ 4 ^h . 0 ^l .
19	Sa.		☾ λ 11 ^h . 5 ^l .
20	Su.	<i>2d Sunday in Lent.</i>	24. ☾ α 18 ^h . 56 ^l .
21	M.		25. ☾ β 22 ^h . 47 ^l .
22	Tu.		27. ☾ θ Ophiuchi 9 ^h . 37 ^l .
23	W.		☾ B Ophiuchi 11 ^h . 27 ^l .
24	Th.	<i>St. Matthias.</i>	28. ☾ λ 15 ^h . 1 ^l .
25	F.		29. ☾ σ 1 ^h . 32 ^l .
26	Sa.		
27	Su.	<i>3d Sunday in Lent.</i>	
28	M.		
29	Tu.		

[14] FEBRUARY 1780. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Tu.	10. 12. 20. 30	20. 59. 14, 7	17. 7. 11	14. 2, 3	7, 5
2	W.	10. 13. 21. 20	21. 3. 18, 7	16. 49. 57	14. 9, 8	6, 7
3	Th.	10. 14. 22. 11	21. 7. 22, 0	16. 32. 26	14. 16, 5	5, 9
4	F.	10. 15. 23. 0	21. 11. 24, 5	16. 14. 37	14. 22, 4	5, 1
5	Sa.	10. 16. 23. 48	21. 15. 26, 2	15. 56. 31	14. 27, 5	4, 3
6	Su.	10. 17. 24. 35	21. 19. 27, 0	15. 38. 9	14. 31, 8	3, 4
7	M.	10. 18. 25. 20	21. 23. 27, 0	15. 19. 31	14. 35, 2	2, 7
8	Tu.	10. 19. 26. 4	21. 27. 26, 2	15. 0. 38	14. 37, 9	1, 8
9	W.	10. 20. 26. 46	21. 31. 24, 6	14. 41. 29	14. 39, 7	1, 0
10	Th.	10. 21. 27. 26	21. 35. 22, 2	14. 22. 6	14. 40, 7	0, 3
11	F.	10. 22. 28. 5	21. 39. 18, 9	14. 2. 29	14. 41, 0	0, 7
12	Sa.	10. 23. 28. 41	21. 43. 14, 9	13. 42. 38	14. 40, 3	1, 4
13	Su.	10. 24. 29. 16	21. 47. 10, 0	13. 22. 33	14. 38, 9	2, 2
14	M.	10. 25. 29. 49	21. 51. 4, 4	13. 2. 16	14. 36, 7	2, 9
15	Tu.	10. 26. 30. 20	21. 54. 58, 0	12. 41. 46	14. 33, 8	3, 6
16	W.	10. 27. 30. 49	21. 58. 50, 9	12. 21. 5	14. 30, 2	4, 4
17	Th.	10. 28. 31. 16	22. 2. 43, 1	12. 0. 11	14. 25, 8	5, 1
18	F.	10. 29. 31. 42	22. 6. 34, 6	11. 39. 6	14. 20, 7	5, 8
19	Sa.	11. 0. 32. 5	22. 10. 25, 3	11. 17. 51	14. 14, 9	6, 5
20	Su.	11. 1. 32. 27	22. 14. 15, 3	10. 56. 25	14. 8, 4	7, 2
21	M.	11. 2. 32. 47	22. 18. 4, 7	10. 34. 48	14. 1, 2	7, 8
22	Tu.	11. 3. 33. 6	22. 21. 53, 4	10. 13. 2	13. 53, 4	8, 4
23	W.	11. 4. 33. 23	22. 25. 41, 5	9. 51. 7	13. 45, 0	9, 0
24	Th.	11. 5. 33. 38	22. 29. 29, 0	9. 29. 3	13. 36, 0	9, 6
25	F.	11. 6. 33. 52	22. 33. 16, 0	9. 6. 50	13. 26, 4	10, 1
26	Sa.	11. 7. 34. 5	22. 37. 2, 4	8. 44. 28	13. 16, 3	10, 8
27	Su.	11. 8. 34. 16	22. 40. 48, 2	8. 21. 59	13. 5, 5	11, 2
28	M.	11. 9. 34. 26	22. 44. 33, 5	7. 59. 22	12. 54, 3	11, 7
29	Tu.	11. 10. 34. 34	22. 48. 18, 3	7. 36. 39	12. 42, 6	

III. FEBRUARY 1780. [15

Days.	Semidia- meter of the Sun.	Time of D ^c passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 16, 6	1. 8, 1	2. 32, 2	9. 993820	1. 28. 24
7	16. 15, 6	1. 7, 4	2. 31, 8	9. 994274	1. 28. 5
13	16. 14, 4	1. 6, 8	2. 31, 5	9. 994768	1. 27. 46
19	16. 13, 1	1. 6, 1	2. 31, 0	9. 995321	1. 27. 26
25	16. 11, 8	1. 5, 6	2. 30, 5	9. 995948	1. 27. 7

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	11. 22. 14	2	5. 40. 51	5	13* 43. 46 I
3	5. 50. 25	5	18. 56. 54	5	15* 45. 33 E
5	0. 18. 38	9	8. 13. 10	12	17* 41. 41 I
6	18* 46. 54	12	21. 29. 37	12	19. 42. 15 E
8	13. 15. 13	16	10* 46. 13	19	21. 40. 6 I
10	7. 43. 33	20	0. 2. 58	19	23. 39. 40 E
12	2. 11. 59	23	13* 19. 54	27	1. 39. 13 I
13	20. 40. 24	27	2. 36. 58	27	3. 37. 46 E
15	15* 8. 51			IV. Satellite. Conj.	
17	9. 37. 24			4	20. 16 Sup.
19	4. 5. 55			13	4. 42 Inf.
20	22. 34. 36			21	12* 33 Sup.
22	17* 3. 11			29	20. 37 Inf.
24	11* 31. 54				
26	6. 0. 32				
28	0. 29. 19				
29	18. 58. 7				

[16] FEBRUARY 1780. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
M E R C U R Y.						
1	7. 23. 51	0. 59 S	9. 19. 40	0. 23 S	22. 25 S	22. 28
4	8. 2. 13	2. 0	9. 23. 46	0. 46	22. 8	22. 34
7	8. 10. 29	2. 57	9. 28. 2	1. 6	21. 39	22. 40
10	8. 18. 43	3. 50	10. 2. 27	1. 24	21. 0	22. 47
13	8. 27. 2	4. 38	10. 7. 0	1. 39	20. 9	22. 55
16	9. 5. 30	5. 21	10. 11. 42	1. 50	19. 4	23. 3
19	9. 14. 13	5. 59	10. 16. 31	2. 0	17. 49	23. 10
22	9. 23. 19	6. 29	10. 21. 29	2. 6	16. 21	23. 19
25	10. 2. 53	6. 49	10. 26. 36	2. 8	14. 40	23. 28
28	10. 13. 4	7. 0	11. 1. 53	2. 6	12. 49	23. 37
V E N U S.						
1	0. 11. 54	3. 1 S	11. 7. 7	1. 28 S	10. 16 S	1. 38
7	0. 21. 28	2. 43	11. 14. 34	1. 21	7. 22	1. 41
13	1. 1. 3	2. 20	11. 21. 58	1. 11	4. 16	1. 45
19	1. 10. 39	1. 54	11. 29. 20	0. 58	1. 9 S	1. 49
25	1. 20. 16	1. 24	0. 6. 43	0. 44	2. 0 N	1. 52
M A R S.						
1	0. 29. 43	0. 35 S	11. 29. 32	0. 26 S	0. 35 S	3. 0
7	1. 3. 12	0. 28	0. 3. 59	0. 21	1. 16 N	2. 52
13	1. 6. 40	0. 22	0. 8. 29	0. 16	3. 7	2. 44
19	1. 10. 5	0. 15	0. 12. 54	0. 11	4. 55	2. 37
25	1. 13. 30	0. 9	0. 17. 19	0. 6	6. 42	2. 31
J U P I T E R.						
1	6. 16. 59	1. 18 N	6. 27. 2	1. 23 N	9. 8 S	16. 40
7	6. 17. 26	1. 18	6. 27. 9	1. 25	9. 8	16. 16
13	6. 17. 53	1. 18	6. 27. 9	1. 26	9. 8	15. 53
19	6. 18. 21	1. 18	6. 27. 3	1. 28	9. 3	15. 30
25	6. 18. 48	1. 18	6. 26. 50	1. 29	8. 58	15. 6
S A T U R N.						
1	8. 1. 53	1. 55 N	8. 7. 2	1. 51 N	19. 41 S	19. 20
7	8. 2. 4	1. 55	8. 7. 26	1. 52	19. 43	18. 58
13	8. 2. 15	1. 54	8. 7. 48	1. 53	19. 46	18. 35
19	8. 2. 26	1. 54	8. 8. 7	1. 54	19. 48	18. 13
25	8. 2. 37	1. 54	8. 8. 19	1. 54	19. 50	17. 51

V. FEBRUARY 1780. [17]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Tu.	8. 28. 46. 15	9. 4. 46. 47	2. 28. 4 S	2. 54. 52 S
2	W.	9. 10. 45. 47	9. 16. 43. 40	3. 19. 35	3. 41. 58
3	Th.	9. 22. 40. 42	9. 28. 37. 8	4. 1. 51	4. 19. 2
4	F.	10. 4. 33. 13	10. 10. 29. 8	4. 33. 20	4. 44. 40
5	Sa.	10. 16. 25. 2	10. 22. 21. 5	4. 52. 53	4. 57. 55
6	Su.	10. 28. 17. 27	11. 4. 14. 15	4. 59. 42	4. 58. 13
7	M.	11. 10. 11. 40	11. 16. 9. 55	4. 53. 28	4. 45. 29
8	Tu.	11. 22. 9. 10	11. 28. 9. 43	4. 34. 18	4. 20. 3
9	W.	0. 4. 11. 52	0. 10. 15. 56	4. 2. 46	3. 42. 40
10	Th.	0. 16. 22. 20	0. 22. 31. 28	3. 19. 49	2. 54. 30
11	F.	0. 28. 43. 51	1. 4. 59. 55	2. 26. 50	1. 57. 7
12	Sa.	1. 11. 20. 15	1. 17. 45. 19	1. 25. 35	0. 52. 35 S
13	Su.	1. 24. 15. 42	2. 0. 51. 51	0. 18. 25 S	0. 16. 30 N
14	M.	2. 7. 34. 15	2. 14. 23. 14	0. 51. 43 N	1. 26. 46
15	Tu.	2. 21. 19. 9	2. 28. 22. 7	2. 1. 6	2. 34. 10
16	W.	3. 5. 32. 8	3. 12. 48. 56	3. 5. 18	3. 33. 56
17	Th.	3. 20. 12. 7	3. 27. 41. 0	3. 59. 21	4. 21. 0
18	F.	4. 5. 14. 40	4. 12. 52. 0	4. 38. 17	4. 50. 47
19	Sa.	4. 20. 31. 39	4. 28. 12. 12	4. 58. 6	5. 0. 3
20	Su.	5. 5. 52. 6	5. 13. 29. 52	4. 56. 36	4. 47. 53
21	M.	5. 21. 4. 4	5. 28. 33. 29	4. 34. 7	4. 15. 45
22	Tu.	6. 5. 57. 3	6. 13. 13. 57	3. 53. 16	3. 27. 16
23	W.	6. 20. 23. 37	6. 27. 25. 44	2. 58. 21	2. 27. 9
24	Th.	7. 4. 20. 12	7. 11. 7. 9	1. 54. 20	1. 20. 25
25	F.	7. 17. 46. 49	7. 24. 19. 38	0. 45. 57 N	0. 11. 28 N
26	Sa.	8. 0. 46. 3	8. 7. 6. 40	0. 22. 39 S	0. 55. 59 S
27	Su.	8. 13. 22. 3	8. 19. 32. 51	1. 28. 9	1. 58. 54
28	M.	8. 25. 39. 45	9. 1. 43. 19	2. 27. 55	2. 54. 59
29	Tu.	9. 7. 44. 9	9. 13. 42. 52	3. 19. 52	3. 42. 23

[18] FEBRUARY 1780. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	27	21. 40	268. 38	275. 19	25. 56 S	26. 18 S
2	W.	28	22. 30	281. 59	288. 39	26. 21	26. 5
3	Th.	29	23. 19	295. 14	301. 44	25. 32	24. 41
4	F.	1	0	308. 5	314. 20	23. 33	22. 11
5	Sa.	2	0. 7	320. 26	326. 25	20. 35	18. 46
6	Su.	3	0. 52	332. 16	337. 59	16. 46	14. 35
7	M.	4	1. 34	343. 36	349. 9	12. 17	9. 51
8	Tu.	5	2. 15	354. 37	0. 3	7. 20	4. 42 S
9	W.	6	2. 55	5. 27	10. 53	2. 3 S	0. 39 N
10	Th.	7	3. 36	16. 22	21. 55	3. 22 N	6. 4
11	F.	8	4. 18	27. 34	33. 23	8. 44	11. 22
12	Sa.	9	5. 3	39. 21	45. 33	13. 53	16. 18
13	Su.	10	5. 52	51. 58	58. 39	18. 34	20. 37
14	M.	11	6. 46	65. 37	72. 51	22. 27	23. 59
15	Tu.	12	7. 45	80. 24	88. 11	25. 12	26. 2
16	W.	13	8. 48	96. 10	104. 18	26. 26	26. 24
17	Th.	14	9. 53	112. 31	120. 43	25. 53	24. 54
18	F.	15	10. 56	128. 50	136. 49	23. 29	21. 37
19	Sa.	16	11. 56	144. 36	152. 11	19. 22	16. 48
20	Su.	17	12. 52	159. 32	166. 40	13. 58	10. 55
21	M.	18	13. 45	173. 37	180. 23	7. 46	4. 29 N
22	Tu.	19	14. 35	186. 59	193. 31	1. 12 N	2. 3 S
23	W.	20	15. 24	199. 58	206. 21	5. 13 S	8. 17
24	Th.	21	16. 13	212. 44	219. 7	11. 11	13. 54
25	F.	22	17. 3	225. 32	232. 0	16. 25	18. 41
26	Sa.	23	17. 53	238. 32	245. 7	20. 42	22. 27
27	Su.	24	18. 45	251. 46	258. 27	23. 53	25. 2
28	M.	25	19. 37	265. 11	271. 55	25. 52	26. 22
29	Tu.	26	20. 28	278. 38	285. 19	26. 34	26. 27

VII. FEBRUARY 1780. [19]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Prop. Lo- par. at Noon.	Prop. Lo- par. at Midn.
M. S.	M. S.	M. S.	M. S.	M. S.	M. S.		
1	Tu.	14. 55	14. 52	54. 45	54. 34	5169	5183
2	W.	14. 50	14. 47	54. 25	54. 16	5195	5207
3	Th.	14. 46	14. 45	54. 12	54. 8	5213	5218
4	F.	14. 44	14. 44	54. 5	54. 2	5222	5226
5	Sa.	14. 43	14. 44	54. 2	54. 3	5226	5225
6	Su.	14. 44	14. 45	54. 5	54. 8	5222	5218
7	M.	14. 46	14. 48	54. 13	54. 19	5211	5203
8	Tu.	14. 50	14. 53	54. 27	54. 36	5193	5181
9	W.	14. 56	14. 59	54. 47	55. 0	5166	5149
10	Th.	15. 3	15. 7	55. 15	55. 31	5129	5108
11	F.	15. 13	15. 18	55. 50	56. 10	5084	5058
12	Sa.	15. 24	15. 31	56. 32	56. 56	5029	4999
13	Su.	15. 38	15. 45	57. 21	57. 47	4967	4934
14	M.	15. 52	16. 0	58. 14	58. 42	4901	4866
15	Tu.	16. 7	16. 14	59. 9	59. 36	4833	4800
16	W.	16. 22	16. 28	60. 1	60. 25	4770	4741
17	Th.	16. 34	16. 39	60. 46	61. 5	4716	4693
18	F.	16. 42	16. 45	61. 19	61. 28	4677	4666
19	Sa.	16. 46	16. 46	61. 33	61. 33	4660	4660
20	Su.	16. 45	16. 42	61. 28	61. 17	4666	4679
21	M.	16. 38	16. 33	61. 3	60. 45	4696	4717
22	Tu.	16. 27	16. 20	60. 22	59. 56	4745	4776
23	W.	16. 13	16. 5	59. 32	59. 0	4805	4844
24	Th.	15. 57	15. 49	58. 31	58. 2	4880	4916
25	F.	15. 41	15. 33	57. 33	57. 4	4952	4989
26	Sa.	15. 26	15. 19	56. 38	56. 13	5022	5054
27	Su.	15. 13	15. 7	55. 49	55. 30	5085	5110
28	M.	15. 2	14. 58	55. 11	54. 55	5134	5155
29	Tu.	14. 24	14. 51	54. 41	54. 30	5174	5189

[20] FEBRUARY 1780. VIII.

Distances of J's Center from ☉, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	43. 37. 35	42. 15. 24	40. 53. 23	39. 31. 32
7	Aldebaran.	86. 4. 52	84. 36. 13	83. 7. 30	81. 38. 45
8		74. 13. 53	72. 44. 41	71. 15. 23	69. 45. 59
9		62. 17. 29	60. 47. 27	59. 17. 18	57. 47. 1
10		50. 13. 34	48. 42. 27	47. 11. 11	45. 39. 46
11		38. 0. 22	36. 28. 2	34. 55. 34	33. 22. 59
12		25. 38. 51			
12	Pollux.	69. 11. 5	67. 35. 7	65. 58. 48	64. 22. 9
13		56. 13. 55	54. 35. 13	52. 56. 9	51. 16. 43
14		42. 53. 50	41. 12. 5	39. 29. 57	37. 47. 26
15		29. 8. 59			
15	Regulus.	65. 27. 25	63. 42. 31	61. 57. 11	60. 11. 26
16		51. 16. 40	49. 28. 34	47. 40. 7	45. 51. 20
17		36. 42. 42	34. 52. 7	33. 1. 18	31. 10. 21
18		21. 54. 29			
18	Spica 𐌸	75. 45. 30	73. 52. 15	71. 58. 50	70. 5. 14
19		60. 35. 37	58. 41. 30	56. 47. 25	54. 53. 21
20		45. 24. 12	43. 30. 46	41. 37. 35	39. 44. 38
21		30. 24. 36			
21	Antares.	76. 5. 16	74. 12. 56	72. 20. 55	70. 29. 13
22		61. 15. 54	59. 26. 23	57. 37. 18	55. 48. 38
23		46. 51. 53	45. 5. 54	43. 20. 25	41. 35. 24
24		32. 57. 51			
24	α Aquilæ.	84. 7. 12	82. 42. 0	81. 17. 20	79. 53. 11
25		73. 0. 56	71. 40. 19	70. 20. 24	69. 1. 9
26		62. 35. 57	61. 21. 10	60. 7. 34	58. 54. 42
25	The Sun.	121. 12. 17	119. 37. 36	118. 3. 21	116. 29. 34
25		108. 46. 57	107. 15. 42	105. 44. 51	104. 14. 24
26		96. 48. 2	95. 19. 53	95. 52. 4	92. 24. 37
27		85. 12. 19	83. 46. 48	82. 21. 33	80. 56. 35
28		73. 55. 34	72. 32. 6	71. 8. 50	69. 45. 47
29		62. 53. 24	61. 31. 25	60. 9. 35	58. 47. 54
M.1		52. 1. 27			

IX. FEBRUARY 1780. [21]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	38. 9. 49			
7	Aldebaran.	80. 9. 55	78. 41. 1	77. 12. 3	75. 43. 0
8		68. 16. 30	66. 46. 55	65. 17. 13	63. 47. 24
9		56. 16. 37	54. 46. 4	53. 15. 22	51. 44. 32
10		44. 8. 12	42. 36. 28	41. 4. 35	39. 32. 33
11		31. 50. 19	30. 17. 33	28. 44. 43	27. 11. 49
12	Pollux.	62. 45. 11	61. 7. 54	59. 30. 15	57. 52. 15
13		49. 36. 55	47. 56. 43	46. 16. 9	44. 35. 11
14		36. 4. 31	34. 21. 13	32. 37. 33	30. 53. 28
15	Regulus.	58. 25. 16	56. 38. 41	54. 51. 44	53. 4. 24
16		44. 2. 13	42. 12. 46	40. 23. 1	38. 33. 0
17		29. 19. 15	27. 28. 5	25. 36. 52	23. 45. 39
18	Spica α	68. 11. 30	66. 17. 38	64. 23. 42	62. 29. 42
19		52. 59. 19	51. 5. 21	49. 11. 30	47. 17. 48
20		37. 51. 56	35. 59. 33	34. 7. 31	32. 15. 50
21	Antares.	68. 37. 50	66. 46. 47	64. 56. 7	63. 5. 49
22		54. 0. 23	52. 12. 35	50. 25. 14	48. 38. 20
23		39. 50. 53	38. 6. 52	36. 23. 21	34. 40. 21
24	α Aquilæ.	78. 29. 32	77. 6. 29	75. 44. 2	74. 22. 10
25		67. 42. 36	66. 24. 47	65. 7. 42	63. 51. 25
26		57. 42. 46			
24	The Sun.	114. 56. 10	113. 23. 14	111. 50. 43	110. 18. 37
25		102. 44. 21	101. 14. 43	99. 45. 26	98. 16. 33
26		90. 57. 30	89. 30. 44	88. 4. 17	86. 38. 8
27		79. 31. 53	78. 7. 26	76. 43. 14	75. 19. 17
28		68. 22. 57	67. 0. 18	65. 37. 50	64. 15. 32
29		57. 26. 21	56. 4. 56	54. 43. 40	53. 22. 30

[22] FEBRUARY 1780. X.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica α	67. 56. 22	69. 26. 25	70. 56. 21	72. 26. 9
2		79. 53. 37	81. 22. 50	82. 51. 59	84. 21. 3
3		91. 45. 23			
9	The Sun.	43. 54. 3	45. 16. 32	46. 39. 11	48. 2. 1
10		54. 58. 59	56. 22. 58	57. 47. 10	59. 11. 35
11		66. 17. 9	67. 43. 0	69. 9. 7	70. 35. 31
12		77. 51. 49	79. 19. 58	80. 48. 26	82. 17. 15
13		89. 46. 26	91. 17. 20	92. 48. 37	94. 20. 16
14		102. 4. 21	103. 38. 21	105. 12. 46	106. 47. 35
15		114. 47. 50	116. 25. 7	118. 2. 49	119. 40. 55
13	α Arietis.	22. 6. 33	23. 30. 29	24. 56. 15	26. 23. 42
14		34. 2. 22	35. 37. 26	37. 13. 24	38. 50. 16
15		47. 6. 6	48. 47. 17	50. 29. 6	52. 11. 31
16		60. 52. 2			
16	Aldebaran.	30. 2. 14	31. 48. 27	33. 35. 17	35. 22. 40
17		44. 27. 17	46. 17. 33	48. 8. 13	49. 59. 15
18		59. 19. 15	61. 12. 5	63. 5. 6	64. 58. 20
19		74. 26. 40	76. 20. 37	78. 14. 36	80. 8. 36
20	Pollux.	89. 37. 59			
20		45. 27. 49	47. 21. 53	49. 15. 48	51. 9. 34
21		60. 35. 21	62. 27. 46	64. 19. 53	66. 11. 42
22	Regulus.	75. 25. 43	77. 15. 24	79. 4. 41	80. 53. 34
23		53. 38. 44	55. 24. 36	57. 10. 2	58. 55. 1
24		67. 33. 25	69. 15. 46	70. 57. 40	72. 39. 8
25	Spica α	80. 59. 54	82. 38. 47	84. 17. 15	85. 55. 18
26		40. 0. 56	41. 36. 7	43. 11. 0	44. 45. 35
27		52. 34. 3	54. 6. 54	55. 39. 30	57. 11. 50
28		64. 49. 54	66. 20. 50	67. 51. 34	69. 22. 7
29	M. 1	76. 52. 10	78. 21. 42	79. 51. 6	81. 20. 22
M. 1		88. 44. 58			

XI. FEBRUARY 1780. [22]

Distances of D's Center from ☉, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica ♏	73. 55. 51	75. 25. 26	76. 54. 55	78. 24. 19
2		85. 50. 2	87. 18. 58	88. 47. 49	90. 16. 38
8		38. 25. 45	39. 47. 35	41. 9. 35	42. 31. 44
9		49. 25. 2	50. 48. 14	52. 11. 37	53. 35. 12
10		60. 36. 13	62. 1. 6	63. 26. 12	64. 51. 33
11		72. 2. 12	73. 29. 9	74. 56. 24	76. 23. 58
12	The Sun.	83. 46. 24	85. 15. 52	86. 45. 42	88. 15. 53
13		95. 52. 18	97. 24. 43	98. 57. 32	100. 30. 45
14		108. 22. 48	109. 58. 27	111. 34. 30	113. 10. 58
15		121. 19. 25			
13	α Arietis.	27. 52. 44	29. 23. 14	30. 55. 5	32. 28. 16
14		40. 28. 0	42. 6. 27	43. 45. 38	45. 25. 31
15		53. 54. 31	55. 38. 5	57. 22. 13	59. 6. 52
16	Aldebaran.	37. 10. 36	38. 59. 4	40. 48. 0	42. 37. 25
17		51. 50. 38	53. 42. 22	55. 34. 22	57. 26. 41
18		66. 51. 44	68. 45. 18	70. 38. 59	72. 32. 46
19		82. 2. 35	83. 56. 32	85. 50. 26	87. 44. 16
20	Pollux.	53. 3. 10	54. 56. 33	56. 49. 43	58. 42. 39
21		68. 3. 12	69. 54. 22	71. 45. 11	73. 35. 38
22		82. 42. 1			
22	Regulus.	46. 31. 3	48. 18. 36	50. 5. 44	51. 52. 27
23		60. 39. 36	62. 23. 43	64. 7. 23	65. 50. 37
24		74. 20. 9	76. 0. 44	77. 40. 53	79. 20. 36
25		87. 32. 56			
25	Spica ♏	33. 37. 7	35. 13. 32	36. 49. 38	38. 25. 26
26		46. 19. 52	47. 53. 51	49. 27. 32	51. 0. 56
27		58. 43. 55	60. 15. 45	61. 47. 22	63. 18. 45
28		70. 52. 28	72. 22. 38	73. 52. 39	75. 22. 29
29		82. 49. 31	84. 18. 32	85. 47. 27	87. 16. 15

[24] FEBRUARY 1780. XII.

Configurations of the SATELLITES of JUPITER
at $\frac{1}{4}$ before 6 o' th' Clock in the Morning.

1		.4	⊙	.1.2	3.
2		4♂ I	⊙	3.2.	
3		2♂ 3	⊙	1.4	
4		3.	.1.2 ⊙	.4	
5	I●	.3	⊙	2.	.4
6		2.	⊙	.3.1	.4
7		.2	1. ⊙	.3	4.
8			⊙	2♂ I	3. 4.
9		.1	⊙	3.2.	4.
10		2.3.	⊙	1.4.	
11		3.	.1.2 4. ⊙		
12		4.3	⊙	1. 2.	
13		4.	2. ⊙	I♂ 3	
14		.2	1. ⊙	.3	
15	.4		⊙	.2.1	3.
16	.4	1.	⊙	2♂ 3	
17	.4	2.3.	⊙	1.	
18		3.	.4 .1.2 ⊙		
19		.3	.4 ⊙	1. 2.	
20			.3.1 ⊙	2. 4.	
21		.2	1. ⊙	.3	.4
22			⊙	.2.1	3. 4.
23		1.	⊙	2.3.	.4
24		2.3.	⊙	.1	4.
25		3.	.2.1 ⊙		4.
26		.3	⊙	1. 2.	4.
27			.3.1 ⊙	2.4.	
28	I●	2. 4.	⊙	.3	
29		4.	⊙	.2.1	.3

I. MARCH 1780. [25]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			New Moon — 5. 18. 26
			First Quarter — 13. 11. 58
			Full Moon — 20. 2. 31
			Last Quarter — 27. 7. 19
			D. Other Phenomena.
			2. ☿ ♄ diff. Lat. 1°. 37'.
			3. ☿ ♄ 7 ^h . 38'.
			4. ♀ ☿ diff. Lat. 8'.
			5. ♀ ☿ diff. Lat. 45'.
			5. ☿ ♄ 12 ^h . 10'.
			5. ☿ ♄ 13 ^h . 3'.
			5. ☿ ♄ 13 ^h . 11'.
			13. ☿ ♄ 12 ^h . 43'.
			15. ☿ ♄ 18 ^h . 47'.
			17. ☿ ♄ 17 ^h . 20'.
			19. ♀ ☿ diff. Lat. 14'.
			19. ☿ enters ♄ at 11 ^h . 43'.
			20. ♄ Stationary.
			20. ☿ ♄ Im. 12 ^h . 14 ^h 1/2,
			* 14'S. of ☿'s cent.
			Em. 12 ^h . 59 ^h 1/2, * 9 ^h 3/4
			S. of ☿'s center.
			21. ♀ ☿ diff. Lat. 37'.
			22. ☿ ♄ 5 ^h . 20'.
			23. ☿ ♄ 0 ^h . 33'.
			23. ☿ ♄ 22 ^h . 15'.
			24. ☿ ♄ 2 ^h . 51'.
			25. ☿ ☿ Ophiuchi 17 ^h . 41'.
			27. ☿ ♄ 6 ^h . 5'.
			27. ☿ ♄ 10 ^h . 27'.
			30. ☿ ♄ 14 ^h . 32'.
1	W.	David.	
2	Th.	Chad.	
3	F.		
4	Sa.		
5	Su.	4th Sunday in Lent. Mid-	
6	M.	[lent Sunday.	
7	Tu.	Perpetua.	
8	W.		
9	Th.		
10	F.		
11	Sa.		
12	Su.	5th Sunday in Lent. Gre-	
13	M.	[gory M.	
14	Tu.		
15	W.		
16	Th.		
17	F.	St. Patrick. Cam. T. ends.	
18	Sa.	Ed. K. W. S. Ox. T. ends.	
19	Su.	6th Su. in Lent. Palm Su.	
20	M.		
21	Tu.	Benedict.	
22	W.		
23	Th.		
24	F.	Good Friday. [day.	
25	Sa.	Annunciation, or Lady-	
26	Su.	Easter-Day.	
27	M.	Easter-Monday.	
28	Tu.	Easter-Tuesday.	
29	W.		
30	Th.		
31	F.		

[26]

MARCH 1780.

II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	11. 11. 34. 40	22. 52. 2, 5	7. 13. 49 S	12. 30, 3	12, 7
2	Th.	11. 12. 34. 45	22. 55. 46, 3	6. 15. 53	12. 17, 6	13, 2
3	F.	11. 13. 34. 49	22. 59. 29, 7	6. 27. 51	12. 4, 4	13, 6
4	Sa.	11. 14. 34. 50	23. 3. 12, 6	6. 4. 43	11. 50, 8	14, 0
5	Su.	11. 15. 34. 50	23. 6. 55, 1	5. 41. 30	11. 36, 8	14, 4
6	M.	11. 16. 34. 48	23. 10. 37, 2	5. 18. 12	11. 22, 4	14, 9
7	Tu.	11. 17. 34. 44	23. 14. 18, 8	4. 54. 51	11. 7, 5	15, 3
8	W.	11. 18. 34. 37	23. 18. 0, 0	4. 31. 27	10. 52, 2	15, 7
9	Th.	11. 19. 34. 28	23. 21. 40, 9	4. 7. 58	10. 36, 5	15, 9
10	F.	11. 20. 34. 18	23. 25. 21, 5	3. 44. 26	10. 20, 6	16, 3
11	Sa.	11. 21. 34. 6	23. 29. 1, 7	3. 20. 52	10. 4, 3	16, 7
12	Su.	11. 22. 33. 50	23. 32. 41, 5	2. 57. 16	9. 47, 6	16, 9
13	M.	11. 23. 33. 33	23. 36. 21, 1	2. 33. 37	9. 30, 7	17, 2
14	Tu.	11. 24. 33. 13	23. 40. 0, 4	2. 9. 58	9. 13, 5	17, 5
15	W.	11. 25. 32. 51	23. 43. 39, 5	1. 46. 18	8. 56, 0	17, 7
16	Th.	11. 26. 32. 26	23. 47. 18, 3	0. 22. 37	8. 38, 3	18, 0
17	F.	11. 27. 31. 59	23. 50. 56, 8	0. 58. 56	8. 20, 3	18, 1
18	Sa.	11. 28. 31. 30	23. 54. 35, 2	0. 35. 15	8. 2, 2	18, 2
19	Su.	11. 29. 30. 58	23. 58. 13, 5	0. 11. 34 S	7. 44, 0	18, 4
20	M.	0. 0. 30. 25	0. 1. 51, 6	0. 12. 7 N	7. 25, 6	18, 6
21	Tu.	0. 1. 29. 49	0. 5. 29, 5	0. 35. 46	7. 7, 0	18, 6
22	W.	0. 2. 29. 11	0. 9. 7, 4	0. 59. 24	6. 48, 4	18, 6
23	Th.	0. 3. 28. 32	0. 12. 45, 3	1. 23. 0	6. 29, 8	18, 6
24	F.	0. 4. 27. 51	0. 16. 23, 2	1. 46. 35	6. 11, 2	18, 8
25	Sa.	0. 5. 27. 8	0. 20. 0, 9	2. 10. 7	5. 52, 4	18, 8
26	Su.	0. 6. 26. 23	0. 23. 38, 6	2. 33. 36	5. 33, 6	18, 7
27	M.	0. 7. 25. 36	0. 27. 16, 4	2. 57. 3	5. 14, 9	18, 6
28	Tu.	0. 8. 24. 48	0. 30. 54, 3	3. 20. 26	4. 56, 3	18, 6
29	W.	0. 9. 23. 58	0. 34. 32, 2	3. 43. 45	4. 37, 7	18, 5
30	Th.	0. 10. 23. 6	0. 38. 10, 2	4. 7. 0	4. 19, 2	18, 5
31	F.	0. 11. 22. 13	0. 41. 48, 2	2. 30. 12	4. 0, 7	

III. MARCH 1780. [27]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 10, 6	1. 5, 3	2. 30, 1	9. 996510	1. 26. 52
7	16. 9, 0	1. 4, 8	2. 29, 7	9. 997208	1. 26. 33
13	16. 7, 4	1. 4, 5	2. 29, 2	9. 997906	1. 26. 14
19	16. 5, 8	1. 4, 4	2. 28, 8	9. 998628	1. 25. 55
25	16. 4, 1	1. 4, 3	2. 28, 3	9. 999382	1. 25. 36

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
*2	13. 26. 54	*1	15. 54. 2	5	5. 38. 58 I.
4	7. 55. 46	5	5. 11. 19	5	7. 36. 21 E.
6	2. 24. 40	8	18. 28. 45	*12	9. 39. 8 I.
7	20. 53. 35	12	7. 46. 16	*12	11. 35. 27 E.
*9	15. 22. 29	15	21. 3. 51	*19	13. 39. 41 I.
*11	9. 51. 25	*19	10. 21. 32	*19	15. 34. 56 E.
13	4. 20. 23	22	23. 39. 15	26	17. 40. 27 I.
14	22. 49. 23	*26	12. 57. 2	26	19. 34. 38 E.
*16	17. 18. 24	30	2. 14. 51	IV. Satellite. Conj.	
*18	11. 47. 27			9	4. 2 Sup.
20	6. 16. 28			17	11. 42 Inf.
22	0. 45. 31			25	18. 44 Sup.
23	19. 14. 33				
*25	13. 43. 37				
*27	8. 12. 42				
29	2. 41. 48				
30	21. 10. 52				

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MARCH 1780.

IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Decli- nation.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Inf. δ 7 ^d . 21 ^h $\frac{1}{2}$.						
1	10. 20. 17	6. 59 S	11. 5. 29	2. 3 S	11. 25 S	23. 43
4	11. 1. 50	6. 44	11. 11. 1	1. 54	9. 12	23. 53
7	11. 14. 25	6. 9	11. 16. 43	1. 40	6. 47	0. 2
10	11. 28. 12	5. 11	11. 22. 34	1. 21	4. 12	0. 9
13	0. 13. 18	3. 46	11. 28. 30	0. 58	1. 29 S	0. 20
16	0. 29. 46	1. 56 S	0. 4. 30	0. 29 S	1. 21 N	0. 30
19	1. 17. 27	0. 13 N	0. 10. 25	0. 4 N	4. 12	0. 40
22	2. 6. 2	2. 26	0. 16. 8	0. 39	6. 58	0. 49
25	2. 24. 58	4. 26	0. 21. 27	1. 15	9. 32	0. 58
28	3. 13. 35	5. 56	0. 26. 12	1. 50	11. 50	1. 4
31	4. 1. 19	6. 47	1. 0. 12	2. 20	13. 45	1. 7
VENUS.						
1	1. 28. 18	0. 58 S	0. 12. 49	0. 30 S	4. 36 N	1. 56
7	2. 7. 57	0. 24 S	0. 20. 7	0. 13 S	7. 41	2. 1
13	2. 17. 37	0. 10 N	0. 27. 22	0. 6 N	10. 39	2. 5
19	2. 27. 19	0. 44	1. 4. 34	0. 25	13. 28	2. 11
25	3. 7. 1	1. 17	1. 11. 44	0. 46	16. 6	2. 17
MARS.						
1	1. 16. 18	0. 2 S	0. 20. 59	0. 1 S	8. 11 N	2. 25
7	1. 19. 38	0. 4 N	0. 25. 21	0. 3 N	9. 52	2. 20
13	1. 22. 56	0. 10	0. 29. 42	0. 7	11. 29	2. 14
19	1. 26. 11	0. 16	1. 4. 1	0. 11	13. 2	2. 9
25	1. 29. 25	0. 22	1. 8. 18	0. 14	14. 31	2. 3
JUPITER.						
1	6. 19. 11	1. 18 N	6. 26. 33	1. 30 N	8. 51 S	14. 46
7	6. 19. 39	1. 18	6. 26. 19	1. 31	8. 42	14. 22
13	6. 20. 6	1. 18	6. 25. 39	1. 32	8. 30	13. 58
19	6. 20. 33	1. 18	6. 25. 4	1. 33	8. 16	13. 34
25	6. 21. 0	1. 17	6. 24. 24	1. 34	8. 0	13. 10
SATURN.						
1	8. 2. 46	1. 53 N	8. 8. 28	1. 55 N	19. 51 S	17. 33
7	8. 2. 57	1. 53	8. 8. 35	1. 56	19. 51	17. 12
13	8. 3. 8	1. 53	8. 8. 39	1. 56	19. 52	16. 51
19	8. 3. 19	1. 53	8. 8. 40	1. 57	19. 51	16. 28
25	8. 3. 30	1. 52	8. 8. 37	1. 58	19. 49	16. 6

V. MARCH 1780. [29]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	9. 19. 39. 59	9. 25. 35. 57	4. 2. 21 S	4. 19. 35 S
2	Th.	10. 1. 31. 19	10. 7. 26. 24	4. 33. 59	4. 45. 24
3	F.	10. 13. 21. 35	10. 19. 17. 9	4. 53. 45	4. 58. 55
4	Sa.	10. 25. 13. 20	11. 1. 10. 23	5. 0. 51	4. 59. 30
5	Su.	11. 7. 8. 30	11. 13. 7. 47	4. 54. 51	4. 46. 57
6	M.	11. 19. 8. 24	11. 25. 10. 29	4. 35. 49	4. 21. 31
7	Tu.	0. 1. 14. 9	0. 7. 19. 30	4. 4. 11	3. 43. 58
8	W.	0. 13. 26. 44	0. 19. 36. 1	3. 21. 2	2. 55. 34
9	Th.	0. 25. 47. 35	1. 2. 1. 40	2. 27. 49	1. 58. 6
10	F.	1. 8. 18. 33	1. 14. 38. 35	1. 26. 42	0. 53. 54 S
11	Sa.	1. 21. 2. 5	1. 27. 29. 24	0. 20. 4 S	0. 14. 23 N
12	Su.	2. 4. 0. 56	2. 10. 37. 2	0. 49. 2 N	1. 23. 27
13	M.	2. 17. 18. 5	2. 24. 4. 20	1. 57. 10	2. 29. 41
14	Tu.	3. 0. 56. 5	3. 7. 53. 29	3. 0. 29	3. 29. 2
15	W.	3. 14. 56. 36	3. 22. 5. 22	3. 54. 48	4. 17. 15
16	Th.	3. 29. 19. 31	4. 6. 38. 39	4. 35. 53	4. 50. 14
17	F.	4. 14. 2. 13	4. 21. 29. 29	4. 59. 57	5. 4. 35
18	Sa.	4. 28. 59. 28	5. 6. 31. 1	5. 4. 6	4. 58. 21
19	Su.	5. 14. 3. 2	5. 21. 34. 14	4. 47. 25	4. 31. 31
20	M.	5. 29. 3. 22	6. 6. 29. 14	4. 10. 59	3. 46. 19
21	Tu.	6. 13. 50. 46	6. 21. 7. 2	3. 18. 5	2. 46. 54
22	W.	6. 28. 17. 18	7. 5. 21. 4	2. 13. 25	1. 38. 20
23	Th.	7. 12. 18. 0	7. 19. 7. 54	1. 2. 18 N	0. 25. 54 N
24	F.	7. 25. 50. 52	8. 2. 27. 4	0. 10. 16 S	0. 45. 44 S
25	Sa.	8. 8. 56. 50	8. 15. 20. 37	1. 20. 3	1. 52. 51
26	Su.	8. 21. 38. 55	8. 27. 52. 11	2. 23. 47	2. 52. 37
27	M.	9. 4. 1. 6	9. 10. 6. 19	3. 19. 6	3. 43. 2
28	Tu.	9. 16. 8. 23	9. 22. 7. 56	4. 4. 16	4. 22. 41
29	W.	9. 28. 5. 36	10. 4. 1. 55	4. 38. 7	4. 50. 29
30	Th.	10. 9. 57. 28	10. 15. 52. 48	4. 59. 45	5. 5. 44
31	F.	10. 21. 48. 22	10. 27. 44. 38	5. 8. 29	5. 7. 55

[30]		M A R C H 1780.					VI.
Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	27	21. 18	291. 54	298. 27	26. 1 S	25. 18 S
2	Th.	28	22. 6	304. 53	311. 10	24. 18	23. 2
3	F.	29	22. 51	317. 20	323. 22	21. 31	19. 47
4	Sa.	30	23. 34	329. 16	335. 3	17. 51	15. 44
5	Su.	1	6	340. 44	346. 19	13. 27	11. 3
6	M.	2	0. 17	351. 50	357. 18	8. 32	5. 56
7	Tu.	3	0. 58	2. 45	8. 12	3. 15 S	0. 31 S
8	W.	4	1. 39	13. 40	19. 12	2. 14 N	4. 58 N
9	Th.	5	2. 21	24. 49	30. 32	7. 41	10. 21
10	F.	6	3. 6	36. 25	42. 27	12. 55	15. 23
11	Sa.	7	3. 53	48. 41	55. 9	17. 43	19. 51
12	Su.	8	4. 45	61. 51	68. 48	21. 47	23. 26
13	M.	9	5. 41	76. 0	83. 25	24. 48	25. 49
14	Tu.	10	6. 41	91. 3	98. 50	26. 28	26. 42
15	W.	11	7. 42	106. 43	114. 38	26. 31	25. 53
16	Th.	12	8. 44	122. 32	130. 22	24. 49	23. 19
17	F.	13	9. 44	138. 3	145. 35	21. 25	19. 9
18	Sa.	14	10. 41	152. 58	160. 10	16. 35	13. 44
19	Su.	15	11. 35	167. 11	174. 3	10. 42	7. 30
20	M.	16	12. 27	180. 48	187. 27	4. 13 N	0. 53 N
21	Tu.	17	13. 17	194. 2	200. 34	2. 26 S	5. 41 S
22	W.	18	14. 8	207. 5	213. 37	8. 48	11. 46
23	Th.	19	14. 59	220. 11	226. 47	14. 34	17. 7
24	F.	20	15. 51	233. 28	240. 13	19. 24	21. 25
25	Sa.	21	16. 44	247. 1	253. 52	23. 8	24. 31
26	Su.	22	17. 37	260. 45	267. 38	25. 36	26. 20
27	M.	23	18. 30	274. 30	281. 19	26. 43	26. 47
28	Tu.	24	19. 21	288. 3	294. 42	26. 32	25. 58
29	W.	25	20. 9	301. 13	307. 37	25. 6	23. 58
30	Th.	26	20. 56	313. 52	319. 58	22. 35	20. 57
31	F.	27	21. 40	325. 56	331. 46	19. 7	17. 5

VII. M A R C H 1780. [31]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon. M. S.	Semidr. Δ at Mid-night. M. S.	Hor. Par. Δ at Noon. M. S.	Hor. Par. Δ at Midnight. M. S.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
1	W.	14. 49	14. 47	54. 21	54. 14	5201	5210
2	Th.	14. 45	14. 45	54. 9	54. 7	5217	5219
3	F.	14. 44	14. 45	54. 5	54. 6	5222	5221
4	Sa.	14. 45	14. 46	54. 7	54. 11	5219	5214
5	Su.	14. 47	14. 49	54. 15	54. 22	5209	5199
6	M.	14. 50	14. 53	54. 28	54. 37	5191	5179
7	Tu.	14. 55	14. 58	54. 46	54. 57	5167	5153
8	W.	15. 1	15. 5	55. 8	55. 21	5138	5122
9	Th.	15. 8	15. 13	55. 34	55. 49	5104	5085
10	F.	15. 17	15. 22	56. 5	56. 23	5064	5041
11	Sa.	15. 26	15. 32	56. 40	57. 0	5019	4994
12	Su.	15. 37	15. 43	57. 19	57. 41	4970	4942
13	M.	15. 49	15. 55	58. 2	58. 25	4916	4887
14	Tu.	16. 1	16. 7	58. 47	59. 9	4860	4833
15	W.	16. 13	16. 18	59. 30	59. 51	4808	4782
16	Th.	16. 23	16. 28	60. 9	60. 26	4760	4740
17	F.	16. 32	16. 35	60. 40	60. 51	4723	4710
18	Sa.	16. 37	16. 38	60. 58	61. 1	4702	4698
19	Su.	16. 37	16. 36	61. 0	60. 55	4699	4705
20	M.	16. 33	16. 29	60. 45	60. 31	4717	4734
21	Tu.	16. 25	16. 19	60. 14	59. 53	4754	4779
22	W.	16. 13	16. 6	59. 30	59. 5	4808	4838
23	Th.	15. 59	15. 51	58. 38	58. 11	4871	4905
24	F.	15. 44	15. 36	57. 43	57. 15	4940	4975
25	Sa.	15. 29	15. 22	56. 49	56. 23	5008	5041
26	Su.	15. 16	15. 10	56. 0	55. 38	5071	5099
27	M.	15. 4	15. 0	55. 19	55. 1	5124	5148
28	Tu.	14. 56	14. 52	54. 47	54. 35	5166	5182
29	W.	14. 50	14. 48	54. 26	54. 19	5194	5203
30	Th.	14. 47	14. 47	54. 15	54. 14	5209	5210
31	F.	14. 47	14. 47	54. 14	54. 16	5210	5207

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	Aldebaran.	77. 13. 20	75. 43. 47	74. 14. 8	72. 44. 24
7		65. 14. 8	63. 43. 46	62. 13. 18	60. 42. 44
8		53. 8. 15	51. 37. 1	50. 5. 39	48. 34. 13
9		40. 55. 27	39. 23. 25	37. 51. 19	36. 19. 9
10	Pollux.	28. 37. 53			
10		72. 11. 14	70. 36. 18	69. 1. 10	67. 25. 50
11		59. 25. 47	57. 49. 4	56. 12. 8	54. 34. 55
12		46. 25. 2	44. 46. 16	43. 7. 13	41. 27. 54
13	Regulus.	33. 7. 5			
13		69. 28. 20	67. 47. 23	66. 6. 7	64. 24. 33
14		55. 52. 6	54. 8. 40	52. 24. 56	50. 40. 54
15		41. 56. 17	40. 10. 30	38. 24. 28	36. 38. 12
16		27. 43. 46	25. 56. 28	24. 9. 5	22. 21. 47
17	Spica μ	13. 30. 32			
17		67. 2. 35	65. 11. 59	63. 21. 10	61. 30. 11
18		52. 13. 10	50. 21. 29	48. 29. 44	46. 37. 58
19		37. 19. 27	35. 27. 59	33. 36. 41	31. 45. 37
20	Antares.	22. 34. 52			
20		68. 7. 54	66. 16. 28	64. 25. 13	62. 34. 11
21		53. 22. 55	51. 33. 33	49. 44. 31	47. 55. 58
22		38. 58. 1	37. 11. 40	35. 25. 45	33. 40. 17
23	α Aquilæ.	25. 0. 12			
23		77. 37. 13	76. 12. 23	74. 48. 9	73. 24. 32
24		66. 36. 58	65. 17. 45	63. 59. 22	62. 41. 52
25	Fomalhaut.	56. 28. 49			
25		81. 52. 45	80. 19. 46	78. 47. 12	77. 15. 1
26		69. 40. 6	68. 10. 19	66. 40. 56	65. 11. 58
27	The Sun.	57. 52. 58			
25		116. 29. 50	115. 0. 41	113. 31. 54	112. 3. 29
26		104. 46. 40	103. 20. 19	101. 54. 17	100. 28. 33
27		93. 24. 9	92. 0. 4	90. 36. 12	89. 12. 34
28		82. 17. 36	80. 55. 10	79. 32. 54	78. 10. 46
29		71. 22. 10	70. 0. 46	68. 39. 28	67. 18. 15
30		60. 33. 2	59. 12. 6	57. 51. 10	56. 30. 15
31		49. 45. 37	48. 24. 37	47. 3. 34	45. 42. 28
A. 1		38. 56. 4			

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	Aldebaran.	71. 14. 33	69. 44. 36	68. 14. 33	66. 44. 24
7		59. 12. 3	57. 41. 16	56. 10. 22	54. 39. 22
8		47. 2. 39	45. 30. 59	43. 59. 14	42. 27. 23
9		34. 46. 56	33. 14. 41	31. 42. 25	30. 10. 9
10	Pollux.	65. 50. 17	64. 14. 30	62. 38. 29	61. 2. 16
11		52. 57. 27	51. 19. 44	49. 41. 46	48. 3. 32
12		39. 48. 19	38. 8. 26	36. 28. 16	34. 47. 49
13	Regulus.	62. 42. 41	61. 0. 30	59. 18. 1	57. 35. 13
14		48. 56. 34	47. 11. 56	45. 27. 0	43. 41. 47
15		34. 51. 42	33. 4. 57	31. 18. 1	29. 30. 57
16		20. 34. 40	18. 47. 54	17. 1. 35	15. 15. 46
17	Spica μ	59. 39. 2	57. 47. 44	55. 56. 19	54. 4. 47
18		44. 46. 12	42. 54. 26	41. 2. 41	39. 11. 1
19		29. 54. 47	28. 4. 15	26. 14. 4	24. 24. 16
20	Antares.	60. 43. 24	58. 52. 52	57. 2. 36	55. 12. 37
21		46. 7. 30	44. 19. 33	42. 31. 59	40. 44. 48
22		31. 55. 17	30. 10. 46	28. 26. 44	26. 43. 12
23	α Aquilæ.	72. 1. 35	70. 39. 19	69. 17. 46	67. 56. 59
24		61. 25. 18	60. 9. 41	58. 55. 2	57. 41. 24
25	Fomalhaut.	75. 43. 14	74. 11. 51	72. 42. 52	71. 10. 17
26		63. 43. 23	62. 15. 12	60. 47. 24	59. 19. 59
25	The Sun.	110. 35. 26	109. 7. 44	107. 40. 22	106. 13. 21
26		99. 3. 6	97. 37. 58	96. 13. 6	94. 48. 30
27		87. 49. 10	86. 25. 59	85. 3. 0	83. 40. 12
28		76. 48. 49	75. 26. 59	74. 5. 16	72. 43. 40
29		65. 57. 6	64. 36. 1	63. 14. 59	61. 53. 59
30		55. 7. 21	53. 48. 27	52. 37. 31	51. 6. 35
31		44. 21. 19	43. 0. 7	41. 38. 50	40. 17. 29

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MARCH 1780.

X.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	42. 51. 4	44. 19. 39	45. 48. 11	47. 16. 40
2		54. 38. 34	56. 6. 51	57. 35. 8	59. 3. 24
3		66. 24. 49	67. 53. 9	69. 21. 30	70. 49. 53
10	The Sun.	47. 45. 15	49. 12. 15	50. 39. 30	52. 6. 59
11		59. 28. 1	60. 56. 59	62. 25. 12	63. 55. 42
12		71. 27. 13	72. 58. 22	74. 29. 48	76. 1. 32
13		83. 44. 45	85. 18. 20	86. 52. 13	88. 26. 25
14		96. 22. 20	97. 58. 30	99. 35. 0	101. 11. 50
15		109. 20. 55	110. 59. 43	112. 38. 50	114. 18. 16
14	Aldebaran.	25. 38. 26	27. 18. 53	29. 0. 3	30. 41. 55
15		39. 19. 21	41. 4. 14	42. 49. 34	44. 35. 21
16		53. 30. 0	55. 17. 59	57. 6. 17	58. 54. 54
17		68. 2. 21			
17	Pollux.	23. 46. 57	25. 37. 28	27. 28. 15	29. 19. 17
18		38. 37. 28	40. 29. 34	42. 21. 46	44. 14. 3
19		53. 36. 12	55. 28. 38	57. 21. 2	59. 13. 22
20		68. 33. 25			
20	Regulus.	32. 27. 36	34. 18. 7	36. 8. 30	37. 58. 46
21		47. 7. 22	48. 56. 24	50. 45. 8	52. 33. 35
22		61. 30. 57	63. 17. 20	65. 3. 20	66. 48. 57
23		75. 31. 2			
23	Spica α	21. 44. 15	23. 25. 19	25. 6. 12	26. 46. 53
24		35. 6. 40	36. 45. 42	38. 24. 23	40. 2. 44
25		48. 9. 9	49. 45. 21	51. 21. 12	52. 56. 43
26		60. 49. 15			
26	Antares.	15. 4. 43	16. 36. 33	18. 8. 19	19. 40. 2
27		27. 17. 5	28. 48. 3	30. 18. 49	31. 49. 25
28		39. 19. 53	40. 49. 30	42. 18. 58	43. 48. 19
29		51. 13. 19	52. 42. 0	54. 10. 37	55. 39. 10
30		63. 1. 12	64. 29. 31	65. 57. 51	67. 26. 10
31		74. 47. 57	76. 16. 24	77. 44. 55	79. 13. 30
A. I		86. 37. 28			

XI. MARCH 1780. [35]

Distances of ☽'s Center from ☉, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	48. 45. 7	50. 13. 32	51. 41. 54	53. 10. 15
2		60. 31. 40	61. 59. 56	63. 28. 13	64. 56. 31
3		72. 18. 18			
9	The Sun.	41. 59. 32	43. 25. 37	44. 51. 56	46. 18. 29
10		53. 34. 42	55. 2. 39	56. 30. 51	57. 59. 19
11		65. 25. 27	66. 55. 29	68. 25. 47	69. 56. 21
12		77. 33. 34	79. 5. 54	80. 38. 32	82. 11. 29
13		90. 0. 57	92. 35. 48	93. 10. 59	94. 46. 30
14		102. 49. 0	104. 26. 29	106. 4. 18	107. 42. 27
15		115. 58. 1			
13	Aldebaran.	19. 5. 8	20. 42. 4	22. 19. 58	23. 58. 46
14		32. 24. 33	34. 7. 22	35. 50. 51	37. 34. 51
15		46. 21. 35	48. 8. 10	49. 55. 4	51. 42. 21
16		60. 43. 50	62. 33. 3	64. 22. 33	66. 12. 19
17	Pollux.	31. 10. 32	33. 2. 0	34. 53. 40	36. 45. 30
18		46. 6. 25	47. 58. 50	49. 51. 17	51. 43. 45
19		61. 5. 37	62. 57. 47	64. 49. 50	66. 41. 43
20	Regulus.	39. 48. 53	41. 38. 49	43. 28. 33	45. 18. 4
21		54. 21. 45	56. 9. 35	57. 57. 3	59. 44. 11
22		68. 34. 11	70. 19. 1	72. 3. 26	73. 47. 27
23	Spica ♏	28. 27. 22	30. 7. 36	31. 47. 35	33. 27. 17
24		41. 40. 44	43. 18. 22	44. 55. 39	46. 32. 35
25		54. 31. 53	56. 6. 43	57. 41. 13	59. 15. 24
26	Antares.	21. 11. 41	22. 43. 14	24. 14. 39	25. 45. 56
27		33. 19. 51	34. 50. 7	36. 20. 12	37. 50. 7
28		45. 17. 32	46. 46. 38	48. 15. 38	49. 44. 32
29		57. 7. 39	58. 36. 5	60. 4. 29	61. 32. 51
30		68. 54. 28	70. 22. 48	71. 51. 9	73. 19. 32
31		80. 42. 8	82. 10. 50	83. 39. 37	85. 8. 30

[36]

MARCH 1780.

XII.

Configurations of the SATELLITES of JUPITER
at 11 o'Clock at Night.

1		3♂ I	⊙	2.	4		
2		2.	⊙	1.	3	4	
3		2♂ I	⊙		3	4	
4	1.0		⊙	2.	3.		4
5	3.0		⊙	1.			4.
6		3.	2	1.	⊙		4.
7			⊙	2♂ I		4.	
8		3.1	⊙	2.4.			
9		2.	4.	⊙	1.	3	
10		4.	2♂ I	⊙		3	
11		4.	⊙	2.	3.		1.0
12	2.0.		⊙	3.	1		
13		3.	2	1.	⊙		
14	4	3	⊙	2.1			
15	4	3	1.	⊙	2.		
16		4	2.	⊙	3	4	
17		2♂ I	⊙	4		3	
18			⊙	1.	2.4	3.	
19			⊙	2.	3.		4. ● 1
20		3.	2	1.	⊙		4
21		3.	⊙	2.1			4
22		3	1.	⊙	2.		4
23		2.	⊙	3	1.		4
24		2.1	⊙			4.3	
25			⊙	1♂ 4	2.	3.	
26		4.	1	⊙	2.	3.	
27		4.	2.3.	1	⊙		
28		4.	3.	⊙	2.1		
29	4.		3	1.	⊙	2.	
30	4		2.	⊙	1		● 3
31		4	2.1	⊙		3	

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon. D. H. M.
1	Sa.		New Moon — 4. 11. 1 First Quarter — 11. 20. 0 Full Moon — 18. 12. 28 Last Quarter — 26. 1. 29
2	Su.	1st Su. aft. East. Low-Su.	D. Other Phenomena. 1. ☾ 1 ad ↓ 19 ^h . 4'.
3	M.	Richard, Bp. of Chich.	☾ 2 ad ↓ 19 ^h . 57'.
4	Tu.	St. Ambrose.	2. ☾ 33 ☿ 20 ^h . 11'.
5	W.	Oxf. and Camb. Terms	6. ☾ 3 23 ^h . 6'.
6	Th.	[begin.	7. ☾ ♀ 18 ^h . 30'.
7	F.		9. ☾ 125 ♂ 14 ^h . 37'.
8	Sa.		☾ 132 ♂ 18 ^h . 17'.
9	Su.	2d Sunday after Easter.	11. ♀ Stationary. ☾ ♀ 15 ^h . 54'.
10	M.	From Easter in 15 days,	12. ☾ 2 ad ↓ 1 ^h . 26'.
11	Tu.	[1 ret.	14. ☾ ♀ 1 ^h . 29'.
12	W.	Easter Term begins.	15. ☾ 1 ♂ 9 ^h . 50'.
13	Th.		16. ☾ c ♀ 12 ^h . 3'.
14	F.		☾ γ ♀ 23 ^h . 3'.
15	Sa.		17. ☾ θ ♀ 12 ^h . 25'.
16	Su.	3d Sunday after Easter.	☾ ♀ 22 ^h . 52'.
17	M.	From Easter in 3 weeks,	18. ☾ κ ♀ 15 ^h . 43'.
18	Tu.	[2 ret.	☾ λ ♀ 19 ^h . 55'.
19	W.	Alphege.	19. ☉ enters ♂ at 0 ^h . 31'.
20	Th.		☾ α ♀ Im. 8 ^h . 6' $\frac{1}{2}$. * 8' $\frac{1}{2}$.
21	F.		S. of ♀'s cent. Em.
22	Sa.		9 ^h . 2' $\frac{1}{2}$. * 2' $\frac{1}{2}$ S.
23	Su.	4th Su. after East. St. Geo.	20. ☾ κ ♀ 8 ^h . 2'.
24	M.	From East. in 1 m. 3 ret.	☾ λ ♀ 12 ^h . 51'.
25	Tu.	St. Mark. Prs. Mary born.	☾ ♀ 16 ^h . 36'.
26	W.		22. ☾ θ Ophiuchi 2 ^h . 57'.
27	Th.		23. ☾ φ ♀ 14 ^h . 39'.
28	F.		☾ σ ♀ 18 ^h . 57'.
29	Sa.		☾ τ ♀ 23 ^h . 42'.
30	Su.	5th Su. after East. Rog. Su.	26. ☾ ε ♀ 22 ^h . 13'.
			29. ☾ 1 ad ↓ 2 ^h . 49'.
			☾ 2 ad ↓ 3 ^h . 42'.
			♀ 125 ♂ diff. Lat. 4'.
			30. ☾ 33 ☿ 3 ^h . 59'.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Sa.	0. 12. 21. 17	0. 45. 26, 5	4. 53. 18	3. 42, 5	18, 1
2	Su.	0. 13. 20. 21	0. 49. 4, 9	5. 16. 19	3. 24, 4	18, 0
3	M.	0. 14. 19. 22	0. 52. 43, 4	5. 39. 15	3. 6, 4	17, 8
4	Tu.	0. 15. 18. 21	0. 56. 22, 1	6. 2. 5	2. 48, 6	17, 7
5	W.	0. 15. 17. 18	1. 0. 1, 0	6. 24. 48	2. 30, 9	17, 5
6	Th.	0. 17. 16. 13	1. 3. 40, 0	6. 47. 25	2. 13, 4	17, 2
7	F.	0. 18. 15. 6	1. 7. 19, 3	7. 9. 55	1. 56, 2	17, 0
8	Sa.	0. 19. 13. 56	1. 10. 58, 8	7. 32. 17	1. 39, 2	16, 8
9	Su.	0. 20. 12. 45	1. 14. 38, 6	7. 54. 32	1. 22, 4	16, 5
10	M.	0. 21. 11. 31	1. 18. 18, 6	8. 16. 39	1. 5, 9	16, 2
11	Tu.	0. 22. 10. 14	1. 21. 58, 8	8. 38. 38	0. 49, 7	15, 9
12	W.	0. 23. 8. 56	1. 25. 39, 4	9. 0. 28	0. 33, 8	15, 7
13	Th.	0. 24. 7. 35	1. 29. 20, 2	9. 22. 8	0. 18, 1	15, 4
14	F.	0. 25. 6. 11	1. 33. 1, 3	9. 43. 39	0. 2, 7	15, 1
15	Sa.	0. 26. 4. 46	1. 36. 42, 8	10. 5. 1	Su. 12, 4	14, 7
16	Su.	0. 27. 3. 19	1. 40. 24, 6	10. 26. 12	0. 27, 1	14, 3
17	M.	0. 28. 1. 49	1. 44. 6, 8	10. 47. 13	0. 41, 4	13, 9
18	Tu.	0. 29. 0. 17	1. 47. 49, 4	11. 8. 4	0. 55, 3	13, 5
19	W.	0. 29. 58. 44	1. 51. 32, 4	11. 28. 44	1. 8, 8	13, 1
20	Th.	1. 0. 57. 8	1. 55. 15, 8	11. 49. 12	1. 21, 9	12, 7
21	F.	1. 1. 55. 31	1. 58. 59, 7	12. 9. 29	1. 34, 6	12, 2
22	Sa.	1. 2. 53. 51	2. 2. 44, 0	12. 29. 33	1. 46, 8	11, 7
23	Su.	1. 3. 52. 11	2. 6. 28, 8	12. 49. 26	1. 58, 5	11, 3
24	M.	1. 4. 50. 29	2. 10. 14, 1	13. 9. 6	2. 9, 8	10, 7
25	Tu.	1. 5. 48. 46	2. 13. 59, 9	13. 28. 34	2. 20, 5	10, 2
26	W.	1. 6. 47. 1	2. 17. 46, 2	13. 47. 48	2. 30, 7	9, 7
27	Th.	1. 7. 45. 15	2. 21. 33, 1	14. 6. 49	2. 40, 4	9, 2
28	F.	1. 8. 43. 27	2. 25. 20, 4	14. 25. 36	2. 49, 6	8, 6
29	Sa.	1. 9. 41. 38	2. 29. 8, 3	14. 44. 9	2. 58, 2	8, 0
30	Su.	1. 10. 39. 47	2. 32. 56, 8	15. 2. 28	3. 6, 2	

III. APRIL 1780. [39]

Days of the Month.	Semidiameter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 2, 1	1. 4, 4	2. 27, 6	0,000284	1. 25. 14.
7	16. 0, 5	1. 4, 5	2. 27, 1	0,001031	1. 24. 55
13	15. 58, 9	1. 4, 8	2. 26, 5	0,001745	1. 24. 36
19	15. 57, 4	1. 5, 1	2. 26, 1	0,002446	1. 24. 17
25	15. 55, 8	1. 5, 5	2. 25, 6	0,003145	1. 23. 58

Eclipses of the SATELLITES of JUPITER.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	15*39. 55	2	15*32. 30	2	21. 41. 11 I.
3	10* 9. 1	6	4. 50. 28	10	1. 41. 59 I.
5	4. 38. 6	9	18. 8. 18	17	7. 33. 50 E.
6	23. 7. 11	Emerfions.		24	11*33. 16 E.
8	17. 36. 16	13	9*45. 16	IV. Satellite. Conj.	
10	12* 5. 20	16	23. 2. 59		
Emerfions.		20	12*20. 43	3	2. 12 Inf.
12	8*43. 6	24	1. 38. 31	11	9* 1 Sup.
14	3. 12. 9	27	14*56. 9	19	16. 27 Inf.
15	21. 41. 11			27	23. 19 Sup.
17	16*10. 13				
19	10*39. 11				
21	5. 8. 12				
22	23. 37. 8				
24	18. 6. 5				
26	12*35. 1				
28	7. 3. 54				
30	1. 32. 45				

[40] A P R I L 1780. IV.

Days	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Greatest Elong. 2^d. Inf. δ 21^d. 19^h 1/4.

1	4. 6. 56	6. 55 N	1. 1. 20	2. 29 N	14. 17 N	1. 8
4	4. 22. 55	6. 57	1. 4. 12	2. 51	15. 36	1. 7
7	5. 7. 25	6. 31	1. 6. 7	3. 4	16. 28	1. 4
10	5. 20. 36	5. 45	1. 7. 0	3. 5	16. 47	0. 56
13	6. 2. 35	4. 48	1. 6. 57	2. 54	16. 36	0. 45
16	6. 13. 35	3. 44	1. 6. 4	2. 31	15. 56	0. 31
19	6. 23. 46	2. 38	1. 4. 30	1. 55	14. 50	0. 14
22	7. 3. 19	1. 31	1. 2. 34	1. 10	13. 28	23. 51
25	7. 12. 22	0. 25 N	1. 0. 35	0. 20 N	12. 0	23. 34
28	7. 21. 4	0. 39 S	0. 28. 51	0. 31 S	10. 35	23. 18
30	7. 26. 43	1. 20	0. 27. 57	1. 4	9. 46	23. 8

V E N U S.

1	3. 18. 21	1. 53 N	1. 20. 1	1. 9 N	18. 52 N	2. 24
7	3. 28. 6	2. 20	1. 27. 4	1. 29	20. 57	2. 31
13	4. 7. 51	2. 43	2. 4. 1	1. 48	22. 44	2. 37
19	4. 17. 36	3. 0	2. 10. 55	2. 5	24. 10	2. 45
25	4. 27. 21	3. 14	2. 17. 42	2. 19	25. 12	2. 52

M A R S.

1	2. 3. 8	0. 29 N	1. 13. 16	0. 19 N	16. 9 N	1. 57
7	2. 6. 18	0. 35	1. 17. 29	0. 23	17. 27	1. 52
13	2. 9. 25	0. 41	1. 21. 42	0. 27	18. 38	1. 47
19	2. 12. 30	0. 46	1. 25. 53	0. 30	19. 45	1. 42
25	2. 15. 34	0. 51	2. 0. 3	0. 33	20. 43	1. 37

J U P I T E R. δ 11^d. 3^h.

1	6. 21. 31	1. 17 N	6. 23. 34	1. 34 N	7. 43 S	12. 43
7	6. 21. 58	1. 17	6. 22. 48	1. 34	7. 26	12. 17
13	6. 22. 26	1. 17	6. 22. 3	1. 34	7. 10	11. 52
19	6. 22. 53	1. 17	6. 21. 18	1. 34	6. 52	11. 28
25	6. 23. 20	1. 17	6. 20. 33	1. 34	6. 35	11. 3

S A T U R N.

1	8. 3. 43	1. 52 N	8. 8. 29	1. 59 N	19. 47 N	15. 40
7	8. 3. 54	1. 52	8. 8. 19	1. 59	19. 44	15. 17
13	8. 4. 5	1. 52	8. 8. 6	2. 0	19. 41	14. 54
19	8. 4. 16	1. 51	8. 7. 49	2. 0	19. 38	14. 31
25	8. 4. 27	1. 51	8. 7. 29	2. 1	19. 35	14. 7

V.		A P R I L 1780.			[41
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sa.	11. 3. 41. 57	11. 9. 40. 41	5. 3. 59 S	4. 56. 46 S
2	Su.	11. 15. 41. 8	11. 21. 43. 32	4. 46. 14	4. 32. 25
3	M.	11. 27. 48. 5	0. 3. 54. 58	4. 15. 28	3. 55. 26
4	Tu.	0. 10. 4. 19	0. 16. 16. 8	3. 32. 29	3. 6. 55
5	W.	0. 22. 30. 38	0. 28. 47. 51	2. 38. 51	2. 8. 38
6	Th.	1. 5. 7. 50	1. 11. 30. 43	1. 36. 35.	1. 3. 0 S
7	F.	1. 17. 56. 32	1. 24. 25. 25	0. 28. 21 S	0. 6. 59 N
8	Sa.	2. 0. 57. 26	2. 7. 32. 44	0. 42. 33 N	1. 17. 52
9	Su.	2. 14. 11. 24	2. 20. 53. 36	1. 52. 27	2. 25. 49
10	M.	2. 27. 39. 22	3. 4. 28. 52	2. 57. 27	3. 26. 51
11	Tu.	3. 11. 22. 5	3. 18. 19. 3	3. 53. 33	4. 17. 3
12	W.	3. 25. 19. 43	4. 2. 23. 59	4. 36. 57	4. 52. 48
13	Th.	4. 9. 31. 38	4. 16. 42. 25	5. 4. 18	5. 11. 7
14	F.	4. 23. 55. 55	5. 1. 11. 38	5. 13. 6	5. 10. 4
15	Sa.	5. 8. 29. 3	5. 15. 47. 25	5. 2. 2	4. 49. 5
16	Su.	5. 23. 6. 1	6. 0. 24. 3	4. 31. 25	4. 9. 21
17	M.	6. 7. 40. 39	6. 14. 55. 2	3. 43. 18	3. 13. 44
18	Tu.	6. 22. 6. 22	6. 29. 13. 58	2. 41. 18	2. 6. 35
19	W.	7. 6. 17. 11	7. 13. 15. 27	1. 30. 13	0. 52. 54 N
20	Th.	7. 20. 8. 30	7. 26. 55. 54	0. 15. 14 N	0. 22. 9 S
21	F.	8. 3. 37. 36	8. 10. 13. 38	0. 58. 44 S	1. 34. 2
22	Sa.	8. 16. 44. 3	8. 23. 9. 7	2. 7. 36	2. 39. 6
23	Su.	8. 29. 29. 2	9. 5. 44. 15	3. 8. 13	3. 34. 42
24	M.	9. 11. 55. 10	9. 18. 2. 18	3. 58. 24	4. 19. 5
25	Tu.	9. 24. 6. 9	10. 0. 7. 18	4. 36. 42	4. 51. 6
26	W.	10. 6. 6. 19	10. 12. 3. 49	5. 2. 16	5. 10. 7
27	Th.	10. 18. 0. 21	10. 23. 56. 32	5. 14. 38	5. 15. 46
28	F.	10. 29. 52. 54	11. 5. 50. 2	5. 13. 33	5. 7. 56
29	Sa.	11. 11. 48. 26	11. 17. 48. 36	4. 59. 0	4. 46. 46
30	Su.	11. 23. 50. 55	11. 29. 56. 3	4. 31. 19	4. 12. 32

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	28	22. 23	337. 31	343. 9	14. 53 S	12. 32 S
2	Su.	29	23. 5	348. 42	354. 12	10. 3	7. 27
3	M.	30	23. 46	359. 41	5. 9	4. 47 S	2. 3 S
4	Tu.	1	♂	10. 39	16. 11	0. 44 N	3. 31 N
5	W.	2	0. 28	21. 48	27. 32	6. 18	9. 3
6	Th.	3	1. 12	33. 23	39. 24	11. 44	14. 18
7	F.	4	1. 59	45. 37	52. 1	16. 45	19. 1
8	Sa.	5	2. 50	58. 39	65. 31	21. 4	22. 52
9	Su.	6	3. 44	72. 37	79. 54	24. 23	25. 34
10	M.	7	4. 42	87. 23	95. 1	26. 24	26. 50
11	Tu.	8	5. 43	102. 44	110. 30	26. 51	26. 27
12	W.	9	6. 43	118. 14	125. 53	25. 38	24. 24
13	Th.	10	7. 42	133. 26	140. 50	22. 46	20. 47
14	F.	11	8. 38	148. 4	155. 8	18. 29	15. 54
15	Sa.	12	9. 31	162. 3	168. 49	13. 4	10. 4
16	Su.	13	10. 22	175. 28	182. 1	6. 54	3. 39 N
17	M.	14	11. 12	188. 31	194. 59	0. 22 N	2. 54 S
18	Tu.	15	12. 2	201. 27	207. 56	6. 7 S	9. 14
19	W.	16	12. 53	214. 28	221. 4	12. 13	15. 0
20	Th.	17	13. 45	227. 46	234. 32	17. 33	19. 51
21	F.	18	14. 38	241. 24	248. 21	21. 52	23. 34
22	Sa.	19	15. 33	255. 21	262. 23	24. 55	25. 56
23	Su.	20	16. 27	269. 25	276. 25	26. 36	26. 55
24	M.	21	17. 20	283. 21	290. 11	26. 53	26. 32
25	Tu.	22	18. 10	296. 53	303. 26	25. 51	24. 53
26	W.	23	18. 58	309. 51	316. 5	23. 39	22. 10
27	Th.	24	19. 43	322. 10	328. 6	20. 26	18. 31
28	F.	25	20. 25	333. 54	339. 35	16. 25	14. 9
29	Sa.	26	21. 7	345. 10	350. 41	11. 44	9. 13
30	Su.	27	21. 48	356. 9	1. 37	6. 36	3. 53

VII.

A P R I L 1780.

[43]

Days of the Month.	Days of the Week.	Semidr. D at Noon.	Semidr. D at Mid-night.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Sa.	14. 48	14. 50	54. 20	54. 25	5202	5195
2	Su.	14. 52	14. 54	54. 33	54. 42	5185	5173
3	M.	14. 57	15. 0	54. 52	55. 4	5159	5144
4	Tu.	15. 3	15. 7	55. 15	55. 28	5129	5112
5	W.	15. 11	15. 15	55. 42	55. 56	5094	5076
6	Th.	15. 19	15. 23	56. 11	56. 26	5056	5037
7	F.	15. 27	15. 31	56. 41	56. 57	5018	4998
8	Sa.	15. 35	15. 39	57. 12	57. 27	4979	4960
9	Su.	15. 44	15. 48	57. 43	57. 59	4940	4919
10	M.	15. 52	15. 56	58. 14	58. 29	4901	4882
11	Tu.	16. 0	16. 4	58. 44	58. 59	4864	4845
12	W.	16. 8	16. 11	59. 13	59. 25	4828	4813
13	Th.	16. 15	16. 18	59. 38	59. 48	4798	4786
14	F.	16. 20	16. 22	59. 57	60. 4	4775	4766
15	Sa.	16. 23	16. 24	60. 8	60. 10	4761	4759
16	Su.	16. 24	16. 23	60. 10	60. 6	4759	4764
17	M.	16. 21	16. 18	59. 59	59. 49	4772	4784
18	Tu.	16. 14	16. 10	59. 36	59. 20	4800	4820
19	W.	16. 5	16. 0	59. 2	58. 41	4842	4867
20	Th.	15. 54	15. 47	58. 19	57. 56	4895	4923
21	F.	15. 40	15. 34	57. 33	57. 9	4952	4983
22	Sa.	15. 28	15. 22	56. 45	56. 23	5013	5041
23	Su.	15. 16	15. 10	56. 1	55. 40	5069	5097
24	M.	15. 5	15. 1	55. 22	55. 6	5120	5141
25	Tu.	14. 57	14. 54	54. 52	54. 41	5159	5174
26	W.	14. 52	14. 50	54. 32	54. 25	5186	5195
27	Th.	14. 49	14. 48	54. 22	54. 20	5199	5202
28	F.	14. 49	14. 50	54. 22	54. 26	5199	5194
29	Sa.	14. 51	14. 54	54. 31	54. 40	5187	5175
30	Su.	14. 57	15. 0	54. 51	55. 2	5161	5146

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	Pollux.	75. 21. 29	73. 45. 48	72. 9. 55	70. 33. 51
7		62. 30. 37	60. 53. 24	59. 15. 59	57. 38. 22
8		49. 27. 28	47. 48. 42	46. 9. 45	44. 30. 36
9		36. 12. 4			
9	Regulus.	72. 34. 52	70. 54. 43	69. 14. 23	67. 33. 51
10		59. 8. 21	57. 26. 40	55. 44. 48	54. 2. 45
11		45. 29. 47	43. 46. 41	42. 3. 25	40. 20. 1
12		31. 41. 0	29. 56. 53	28. 12. 44	26. 28. 36
13		17. 49. 51			
13	Spica μ	71. 31. 48	69. 45. 13	67. 58. 27	66. 11. 32
14		57. 14. 47	55. 27. 3	53. 39. 12	51. 51. 16
15		42. 50. 25	41. 2. 8	39. 13. 52	37. 25. 37
16		28. 25. 29			
16	Antares.	74. 4. 28	72. 15. 18	70. 26. 9	68. 37. 3
17		59. 32. 31	57. 43. 55	55. 55. 27	54. 7. 8
18		45. 8. 16	43. 21. 8	41. 34. 14	39. 47. 37
19		30. 58. 51			
19	α Aquilæ.	82. 37. 23	81. 10. 28	79. 43. 57	78. 17. 53
20		71. 15. 17	69. 52. 35	68. 30. 34	67. 9. 16
21		60. 34. 51			
21	Fomal- haut.	86. 58. 19	85. 22. 14	83. 46. 31	82. 11. 11
22		74. 20. 21	72. 47. 22	71. 14. 47	69. 42. 37
23		62. 8. 6	60. 38. 28	59. 9. 17	57. 40. 32
24		50. 23. 44			
24	α Pegasi.	71. 13. 41	69. 50. 41	68. 28. 4	67. 5. 51
25		60. 21. 10	59. 1. 33	57. 42. 26	56. 23. 49
26		49. 58. 47			
23	The Sun.			121. 25. 55	119. 59. 32
24		112. 51. 50	111. 27. 6	110. 2. 36	108. 38. 19
25		101. 40. 19	100. 17. 19	98. 54. 28	97. 31. 47
26		90. 40. 33	89. 18. 39	87. 56. 51	86. 35. 7
27		79. 47. 31	78. 26. 6	77. 4. 42	75. 43. 18
28		68. 56. 4	67. 34. 31	66. 12. 53	64. 51. 11
29		58. 1. 21	56. 39. 3	55. 16. 37	53. 54. 3
30		46. 58. 54	45. 35. 18	44. 11. 31	42. 47. 32

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	Pollux.	68. 57. 35	67. 21. 8	65. 44. 29	64. 7. 39
7		56. 0. 34	54. 22. 35	52. 44. 24	51. 6. 2
8		42. 51. 16	41. 11. 45	39. 32. 2	37. 52. 9
9	Regulus.	65. 53. 8	64. 12. 13	62. 31. 7	60. 49. 50
10		52. 20. 30	50. 38. 5	48. 55. 29	47. 12. 43
11		38. 36. 28	36. 52. 46	35. 8. 56	33. 25. 1
12		24. 44. 32	23. 0. 35	21. 16. 48	19. 33. 13
13	Spica α	64. 24. 28	62. 37. 15	60. 49. 53	59. 2. 24
14		50. 3. 13	48. 15. 5	46. 26. 54	44. 38. 41
15		35. 37. 24	33. 49. 17	32. 1. 14	30. 13. 18
16	Antares.	66. 47. 59	64. 58. 59	63. 10. 4	61. 21. 15
17		52. 18. 59	50. 31. 0	48. 43. 13	46. 55. 39
18		38. 1. 15	36. 15. 11	34. 29. 25	32. 43. 58
19	α Aquilæ.	76. 52. 16	75. 27. 10	74. 2. 37	72. 38. 39
20		65. 48. 42	64. 28. 57	63. 10. 2	61. 52. 0
21	Fomalhaut.	80. 36. 14	79. 1. 40	77. 27. 30	75. 53. 44
22		68. 10. 51	66. 39. 32	65. 8. 38	63. 38. 9
23		56. 12. 14	54. 44. 24	53. 17. 2	51. 50. 9
24	α Pegasi.	65. 44. 3	64. 22. 40	63. 1. 43	61. 41. 14
25		55. 5. 42	53. 48. 8	52. 31. 6	51. 14. 39
23	The Sun.	118. 33. 26	117. 7. 38	115. 42. 6	114. 16. 50
24		107. 14. 18	105. 50. 30	104. 26. 54	103. 3. 31
25		96. 9. 16	94. 46. 54	93. 24. 40	92. 2. 33
26		85. 13. 29	83. 51. 56	82. 30. 25	81. 8. 57
27		74. 21. 54	73. 0. 29	71. 39. 3	70. 17. 34
28		63. 29. 25	62. 7. 33	60. 45. 35	59. 23. 31
29		52. 31. 20	51. 8. 29	49. 45. 28	48. 22. 16
30		41. 23. 23	39. 59. 3		

Distances of γ 's Center from $\odot$, and from Stars west of her.

No.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	86. 37. 26	88. 6. 29	89. 35. 37	91. 4. 52
2		98. 32. 54	100. 2. 54	101. 33. 3	103. 3. 20
3		110. 36. 55			
8	The Sun.	41. 43. 47	43. 15. 3	44. 46. 32	46. 18. 15
9		54. 0. 0	55. 32. 59	57. 6. 11	58. 39. 36
10		66. 29. 51	68. 4. 32	69. 39. 27	71. 14. 34
11		79. 13. 22	80. 49. 46	82. 26. 22	84. 3. 12
12		92. 10. 22	93. 48. 25	95. 26. 41	97. 5. 8
13		105. 20. 21	106. 59. 58	108. 39. 45	110. 19. 42
14		118. 41. 55	120. 22. 48		
12	Aldebaran.	49. 35. 27	51. 19. 43	53. 4. 15	54. 49. 1
13		63. 36. 22	65. 22. 29	67. 8. 47	68. 55. 20
14	Pollux.	33. 35. 24	35. 23. 25	37. 11. 36	38. 59. 56
15		48. 3. 26	49. 52. 26	51. 41. 30	53. 30. 37
16	Regulus.	26. 36. 21	28. 23. 55	30. 11. 41	31. 59. 37
17		40. 59. 51	42. 47. 51	44. 35. 46	46. 23. 37
18		55. 20. 56	57. 7. 54	58. 54. 40	60. 41. 13
19		69. 30. 19	71. 15. 20	73. 0. 3	74. 44. 28
20	Spica μ	29. 26. 47	31. 8. 9	32. 49. 18	34. 30. 13
21		42. 50. 39	44. 29. 50	46. 8. 42	47. 47. 15
22		55. 54. 54	57. 31. 26	59. 7. 38	60. 43. 30
23		68. 37. 58			
23	Antares.	22. 46. 36	24. 20. 0	25. 53. 10	27. 26. 7
24		35. 7. 32	36. 39. 9	38. 10. 33	39. 41. 44
25		47. 14. 39	48. 44. 41	50. 14. 34	51. 44. 17
26		59. 10. 52	60. 39. 50	62. 8. 44	63. 37. 32
27		71. 0. 42	72. 29. 13	73. 57. 44	75. 26. 14
28		82. 49. 3	84. 17. 44	85. 46. 29	87. 15. 18
29		94. 40. 42	96. 10. 7	97. 39. 39	99. 9. 20
30	α Aquilæ.	62. 45. 21	63. 56. 7	65. 7. 28	66. 19. 23
M 1		72. 26. 41			

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	92. 34. 14	94. 3. 43	95. 33. 19	97. 3. 3
2		104. 33. 46	106. 4. 20	107. 35. 3	109. 5. 54
7	The Sun.			38. 41. 55	40. 12. 44
8		47. 50. 10	49. 22. 18	50. 54. 39	52. 27. 13
9		60. 13. 14	61. 47. 4	63. 21. 7	64. 55. 23
10		72. 49. 54	74. 25. 27	76. 1. 13	77. 37. 11
11		85. 40. 13	87. 17. 27	88. 54. 53	90. 32. 31
12		98. 43. 48	100. 22. 39	102. 1. 42	103. 40. 56
13		111. 59. 50	113. 40. 8	115. 20. 35	117. 1. 10
12	Aldebaran.	56. 34. 2	58. 19. 17	60. 4. 45	61. 50. 27
13		70. 42. 2			
13	Pollux.	26. 25. 5	28. 12. 23	29. 59. 52	31. 47. 33
14		40. 48. 24	42. 37. 0	44. 25. 42	46. 14. 31
15		55. 19. 48			
15	Regulus.	19. 29. 0	21. 15. 19	23. 2. 0	24. 49. 2
16		33. 47. 38	35. 35. 40	37. 23. 44	39. 11. 48
17		48. 11. 22	49. 58. 59	51. 46. 27	53. 33. 46
18		62. 27. 33	64. 13. 38	65. 59. 27	67. 45. 1
19		76. 28. 34			
19	Spica μ .	22. 39. 49	24. 21. 45	26. 3. 34	27. 45. 15
20		36. 10. 54	37. 51. 17	39. 31. 21	41. 11. 9
21		49. 25. 28	51. 3. 20	52. 40. 51	54. 18. 2
22		62. 19. 3	63. 54. 16	65. 29. 9	67. 3. 44
23	Antares.	28. 58. 51	30. 31. 21	32. 3. 38	33. 35. 41
24		41. 12. 43	42. 43. 29	44. 14. 3	45. 44. 26
25		53. 13. 52	54. 43. 18	56. 12. 36	57. 41. 47
26		65. 6. 17	66. 34. 57	68. 3. 34	69. 32. 9
27		76. 54. 45	78. 23. 17	79. 51. 50	81. 20. 25
28		88. 44. 11	90. 13. 9	91. 42. 14	93. 11. 25
29		100. 39. 10			
29	α Aquilæ.	58. 8. 59	59. 17. 1	60. 25. 47	61. 35. 14
30		67. 31. 55	68. 44. 55	69. 58. 24	71. 12. 20

Configurations of the SATELLITES of J U P I T E R
at 10 o' th' Clock at Night.

1		4	⊙	1. 1	3.	1
2		4. 1	⊙	2. 3.		
3		2. 3.	⊙	1. 4		
4	2. 0	3.	⊙	1. 4		
5		3.	⊙	1. 2.		4
6		2. 3	⊙	1. 4		
7		1. 2	⊙	3.		4.
8			⊙	1. 2	3.	4.
9		1	⊙	2. 3.	4.	
10		2. 3.	⊙	1. 4.		
11	1. 0 4 ●	3.	⊙	2		
12		3. 4.	⊙	1. 2		
13		4.	⊙	3. 1		
14	4.	2. 1.	⊙	3		
15	4.		⊙	2. 1.	3	
16	4	1	⊙	2. 3.		
17	4	2. 3.	⊙	1.		
18		3. 4	⊙	2. 1		
19	1 ●	2	⊙	4	2	
20	2 ●	3	⊙	1. 4		
21		2. 1.	⊙	3	4	
22			⊙	2. 1	3	4
23		1	⊙	2. 3.		4
24	3 ●	2.	⊙	1.		4.
25		3.	⊙	2. 1		4.
26		3	⊙	1. 2	4.	
27		3	⊙	1. 2.	4.	
28		2. 4. 1.	⊙	3		
29		4.	⊙	2. 1	3	
30		4.	⊙	2. 3.		

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D.H.M.
			New Moon — 4. 0. 54
			First Quarter — 11. 1. 32
			Full Moon — 17. 23. 8
			Last Quarter — 25. 19. 25
			D. Other Phenomena.
			4. ☉ eclipsed, invisible.
			☿ Stationary.
			5. ☾ ♂ 18 ^h . 13 ['] .
			7. ☾ ♀ 12 ^h . 36 ['] .
			11. ☾ ♀ 7 ^h . 24 ['] .
			12. ☾ ♀ 16 ^h . 28 ['] .
			13. ☾ ♀ 19 ^h . 11 ['] .
			14. ☾ ♀ 6 ^h . 43 ['] .
			15. ☾ ♀ 2 ^h . 6 ['] .
			16. ☾ ♀ 4 ^h . 39 ['] .
			☾ ♀ 18 ^h . 51 ['] .
			18. ☾ ♀ 0 ^h . 2 ['] .
			☾ eclipsed, invisible.
			19. ☾ ♀ Ophiuchi 12 ^h . 10 ['] .
			20. ☉ enters ♀ at 1 ^h . 11 ['] .
			☾ ♀ 4 ^h . 11 ['] .
			☾ ♀ 23 ^h . 32 ['] .
			21. ☾ ♀ 3 ^h . 46 ['] .
			☾ ♀ 4 ^h . 25 ['] .
			24. ☾ ♀ 6 ^h . 18 ['] .
1	M.	St. Philip and St. James.	
2	Tu.	[From East. in 5 w. 4 ret.	
3	W.	Invention of the Crofs.	
4	Th.	Ascension-day. H. Thurs.	
5	F.	On mor. of Ascen. 5 ret.	
6	Sa.	John Ev. ante Port. Lat.	
7	Su.	Sunday after Ascension-day.	
8	M.	Easter Term ends.	
9	Tu.		
10	W.		
11	Th.	Oxf. and Cam. T. end.	
12	F.		
13	Sa.		
14	Sa.	Whit-Sunday.	
15	M.		
16	Tu.		
17	W.		
18	Th.		
19	F.	2. Char. b. 1744. Dunst.	
20	Sa.		
21	Su.	Trinity-Sunday.	
22	M.	Prs. Elizabeth born 1770.	
23	Tu.	[On mor. of H. T. 1 ret.	
24	W.	Oxf. and Cam. T. begin.	
25	Th.		
26	F.	August. 1st Abp. of Cant.	
27	Sa.	Vener. Bede. [Tr. T. beg.	
28	Su.	1st Sunday after Trinity.	
29	M.	K. Charles II. Restored.	
30	Tu.	[In 8 days of H. T. 2 ret.	
31	W.		

50		M A Y 1780.						II.						
Days of the Month.	Days of the Week.	Sun's Longitude.				Sun's Right Asc. in Time.		Sun's Declin. North.		Equat. of Time. Sub.		Diff.		
		S.	D.	M.	S.	H.	M.	S.	D.	M.	S.		M.	S.
1	M.	1.	11.	37.	55	2.	36.	45,9	15.	20.	32	3.	13,7	6,9
2	Tu.	1.	12.	36.	2	2.	40.	35,4	15.	38.	20	3.	20,6	6,4
3	W.	1.	13.	34.	7	2.	44.	25,5	15.	55.	54	3.	27,0	5,8
4	Th.	1.	14.	32.	11	2.	48.	16,3	16.	13.	12	3.	32,8	5,3
5	F.	1.	15.	30.	12	2.	52.	7,5	16.	30.	13	3.	38,1	4,8
6	Sa.	1.	16.	28.	12	2.	55.	59,3	16.	46.	58	3.	42,9	4,1
7	Su.	1.	17.	26.	11	2.	59.	51,7	17.	3.	27	3.	47,0	3,6
8	M.	1.	18.	24.	7	3.	3.	44,7	17.	19.	38	3.	50,6	3,1
9	Tu.	1.	19.	22.	2	3.	7.	38,1	17.	35.	32	3.	53,7	2,5
10	W.	1.	20.	19.	55	3.	11.	32,2	17.	51.	9	3.	56,2	2,0
11	Th.	1.	21.	17.	46	3.	15.	26,8	18.	6.	27	3.	58,2	1,4
12	F.	1.	22.	15.	35	3.	19.	22,0	18.	21.	27	3.	59,6	0,8
13	Sa.	1.	23.	13.	23	3.	23.	17,6	18.	36.	8	4.	0,4	0,3
14	Su.	1.	24.	11.	8	3.	27.	13,9	18.	50.	31	4.	0,7	0,4
15	M.	1.	25.	8.	52	3.	31.	10,9	19.	4.	35	4.	0,3	0,8
16	Tu.	1.	26.	6.	35	3.	35.	8,3	19.	18.	19	3.	59,5	1,4
17	W.	1.	27.	4.	16	3.	39.	6,1	19.	31.	44	3.	58,1	1,9
18	Th.	1.	28.	1.	56	3.	43.	4,7	19.	44.	49	3.	56,2	2,5
19	F.	1.	28.	59.	34	3.	47.	3,8	19.	57.	34	3.	53,7	3,0
20	Sa.	1.	29.	57.	11	3.	51.	3,4	20.	9.	58	3.	50,7	3,6
21	Su.	2.	0.	54.	47	3.	55.	3,5	20.	22.	2	3.	47,1	4,2
22	M.	2.	1.	52.	23	3.	59.	4,4	20.	33.	45	3.	42,9	4,7
23	Tu.	2.	2.	49.	57	4.	3.	5,5	20.	45.	7	3.	38,2	5,2
24	W.	2.	3.	47.	30	4.	7.	7,3	20.	56.	8	3.	33,0	5,7
25	Th.	2.	4.	45.	2	4.	11.	9,6	21.	6.	48	3.	27,3	6,3
26	F.	2.	5.	42.	34	4.	15.	12,4	21.	17.	6	3.	21,0	6,8
27	Sa.	2.	6.	40.	6	4.	19.	15,8	21.	27.	2	3.	14,2	7,2
28	Su.	2.	7.	37.	36	4.	23.	19,6	21.	36.	35	3.	7,0	7,7
29	M.	2.	8.	35.	5	4.	27.	23,9	21.	45.	46	2.	59,3	8,2
30	Tu.	2.	9.	32.	34	4.	31.	28,7	21.	54.	35	2.	51,1	8,7
31	W.	2.	10.	30.	3	4.	35.	33,9	22.	3.	1	2.	42,4	

III. MAY 1780. [51]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15.54,4	1. 6,0	2.25,2	0.003814	1.23.38
7	15.53,1	1. 6,5	2.24,8	0.004420	1.23.19
13	15.51,9	1. 7,0	2.24,5	0.004962	1.23. 0
19	15.50,7	1. 7,4	2.24,1	0.005463	1.22.41
25	15.49,7	1. 7,8	2.23,9	0.005928	1.22.22

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite Emerfions.		II. Satellite. Emerfions		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	20. 1.41	1	4.13.35	1	13*43. 4 I.
3	14*30.29	4	17.31. 5	1	15.32.25 E.
5	8*59.18	8	6.48.28	8	17.42.53 I.
7	3.28. 4	11	20. 5.49	8	19.31.34 E.
8	21.56.50	15	9*23. 6	15	21.42.10 I.
10	16.25.34	18	22.40.19	15	23.29.59 E.
12	10*54.16	22	11*57.30	23	1.41. 3 I.
14	5.22.57	26	1.14.39	23	3.28. 1 E.
15	23.51.38	29	14.31.44	30	5.39.34 I.
17	18.20.16			30	7.25.36 E.
19	12*48.54				
21	7.17.29			IV. Satellite. Conj.	
23	1.46. 2				
24	20.14.35			6	6.54 Inf.
26	14.43. 8			14	13.57 Sup.
28	9*11.37			22	21.56 Inf.
30	3.40. 5			31	5.19 Sup.
31	22. 9.33				

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Greatest Elong. 19^d.

1	7. 29. 30	1. 40 S	0. 27. 37	1. 19 S	9. 24 N	23. 3
4	8. 7. 48	2. 38	0. 27. 0	2. 1	8. 32	22. 51
7	8. 16. 2	3. 33	0. 27. 6	2. 35	8. 3	22. 42
10	8. 24. 18	4. 23	0. 27. 53	2. 59	7. 57	22. 34
13	9. 2. 42	5. 7	0. 29. 19	3. 16	8. 11	22. 29
16	9. 11. 20	5. 47	1. 1. 20	3. 25	8. 44	22. 25
19	9. 20. 18	6. 20	1. 3. 55	3. 27	9. 35	22. 24
22	9. 29. 42	6. 45	1. 6. 59	3. 22	10. 40	22. 24
25	10. 9. 40	6. 58	1. 10. 30	3. 10	11. 58	22. 26
28	10. 20. 21	6. 59	1. 14. 26	2. 53	13. 26	22. 29
31	11. 1. 55	6. 43	1. 18. 48	2. 31	15. 1	22. 34

V E N U S. Greatest Elong. 31^d.

1	5. 7. 6	3. 21 N	2. 24. 24	2. 32 N	25. 52 N	2. 59
7	5. 16. 51	3. 23	3. 0. 59	2. 41	26. 9	3. 5
13	5. 26. 35	3. 19	3. 7. 28	2. 46	26. 2	3. 10
19	6. 6. 18	3. 9	3. 13. 47	2. 47	25. 31	3. 14
25	6. 15. 59	2. 54	3. 19. 54	2. 44	24. 41	3. 17

M A R S.

1	2. 18. 36	0. 56 N	2. 4. 10	0. 36 N	21. 36 N	1. 32
7	2. 21. 36	1. 2	2. 8. 16	0. 39	22. 22	1. 26
13	2. 24. 35	1. 6	2. 12. 21	0. 42	22. 59	1. 20
19	2. 27. 32	1. 11	2. 16. 24	0. 45	23. 31	1. 14
25	3. 0. 27	1. 15	2. 20. 27	0. 47	23. 54	1. 7

J U P I T E R.

1	6. 23. 47	1. 16 N	6. 19. 51	1. 33 N	6. 20 S	10. 37
7	6. 24. 14	1. 16	6. 19. 13	1. 32	6. 7	10. 11
13	6. 24. 42	1. 16	6. 18. 39	1. 31	5. 55	9. 46
19	6. 25. 9	1. 16	6. 18. 10	1. 30	5. 46	9. 20
25	6. 25. 37	1. 16	6. 17. 47	1. 28	5. 38	8. 55

S A T U R N. ♂ 25^d. 16^h.

1	8. 4. 38	1. 50 N	8. 7. 7	2. 2 N	19. 31 S	13. 43
7	8. 4. 49	1. 50	8. 6. 43	2. 2	19. 27	13. 18
13	8. 5. 0	1. 49	8. 6. 18	2. 1	19. 23	12. 53
19	8. 5. 11	1. 49	8. 5. 52	2. 1	19. 19	12. 28
25	8. 5. 21	1. 49	8. 5. 25	2. 1	19. 15	12. 2

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	M.	0. 6. 3. 42	0. 12. 14. 46	3. 50. 49 S	3. 26. 14 S
2	Tu.	0. 18. 29. 20	0. 24. 47. 28	2. 58. 54	2. 29. 10
3	W.	1. 1. 9. 21	1. 7. 35. 3	1. 57. 15	1. 23. 36
4	Th.	1. 14. 4. 34	1. 20. 38. 0	0. 48. 28 S	0. 12. 16 S
5	F.	1. 27. 15. 9	2. 3. 55. 55	0. 24. 23 N	1. 1. 4 N
6	Sa.	2. 10. 40. 12	2. 17. 27. 46	1. 37. 14	2. 12. 17
7	Su.	2. 24. 18. 29	3. 1. 12. 4	2. 45. 44	3. 16. 58
8	M.	3. 8. 8. 18	3. 15. 6. 59	3. 45. 33	4. 10. 57
9	Tu.	3. 22. 7. 46	3. 29. 10. 26	4. 32. 40	4. 50. 27
10	W.	4. 6. 14. 39	4. 13. 20. 12	5. 3. 53	5. 12. 45
11	Th.	4. 20. 26. 44	4. 27. 34. 0	5. 16. 49	5. 16. 3
12	F.	5. 4. 41. 37	5. 11. 49. 17	5. 10. 26	5. 0. 3
13	Sa.	5. 18. 56. 35	5. 26. 3. 17	4. 45. 2	4. 25. 40
14	Su.	6. 3. 8. 53	6. 10. 13. 2	4. 2. 15	3. 35. 16
15	M.	6. 17. 15. 19	6. 24. 15. 21	3. 5. 5	2. 32. 17
16	Tu.	7. 1. 12. 44	7. 8. 7. 6	1. 57. 26	1. 21. 5
17	W.	7. 14. 58. 10	7. 21. 45. 32	0. 43. 51 N	0. 6. 20 N
18	Th.	7. 28. 29. 1	8. 5. 8. 27	0. 30. 55 S	1. 7. 21 S
19	F.	8. 11. 43. 37	8. 18. 14. 32	1. 42. 31	2. 15. 54
20	Sa.	8. 24. 41. 6	9. 1. 3. 27	2. 47. 11	3. 16. 0
21	Su.	9. 7. 21. 39	9. 13. 36. 0	3. 42. 7	4. 5. 18
22	M.	9. 19. 46. 39	9. 25. 53. 58	4. 25. 19	4. 42. 12
23	Tu.	10. 1. 58. 17	10. 8. 0. 3	4. 55. 42	5. 5. 51
24	W.	10. 13. 59. 44	10. 19. 57. 49	5. 12. 35	5. 15. 55
25	Th.	10. 25. 54. 54	11. 1. 51. 29	5. 15. 49	5. 12. 23
26	F.	11. 7. 48. 12	11. 13. 45. 36	5. 5. 36	4. 55. 31
27	Sa.	11. 19. 44. 14	11. 25. 44. 48	4. 42. 10	4. 25. 41
28	Su.	0. 1. 47. 44	0. 7. 53. 39	4. 6. 8	3. 43. 40
29	M.	0. 14. 3. 1	0. 20. 16. 16	3. 18. 25	2. 50. 34
30	Tu.	0. 26. 33. 52	1. 2. 56. 5	2. 20. 20	1. 47. 59
31	W.	1. 9. 23. 14	1. 15. 55. 30	1. 13. 51	0. 38. 17 S

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M A Y 1780.

VI.

Days of the Month.	Days of the Week.	D's Age.	D's Pals- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clin. at Noon.	D's De- clin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	M.	28	22. 30	7. 5	12. 36	1. 7 S	1. 41 N
2	Tu.	29	23. 13	18. 12	23. 53	4. 30 N	7. 18
3	W.	30	23. 59	29. 42	35. 41	10. 4	12. 44
4	Th.	1	0	41. 52	48. 15	15. 19	17. 44
5	F.	2	0. 48	54. 52	61. 43	19. 58	21. 58
6	Sa.	3	1. 42	68. 49	76. 9	23. 41	25. 4
7	Su.	4	2. 40	83. 40	91. 21	26. 6	26. 45
8	M.	5	3. 42	99. 7	106. 56	26. 58	26. 46
9	Tu.	6	4. 43	114. 44	122. 28	26. 8	25. 5
10	W.	7	5. 42	130. 0	137. 24	23. 38	21. 49
11	Th.	8	6. 38	144. 38	151. 40	19. 42	17. 16
12	F.	9	7. 30	158. 30	165. 11	14. 37	11. 45
13	Sa.	10	8. 20	171. 43	178. 9	8. 45	5. 38 N
14	Su.	11	9. 8	184. 30	190. 48	2. 27 N	0. 45 S
15	M.	12	9. 56	197. 6	203. 24	3. 52 S	7. 3
16	Tu.	13	10. 45	209. 45	216. 11	10. 5	12. 57
17	W.	14	11. 35	222. 43	229. 22	15. 39	18. 7
18	Th.	15	12. 28	236. 7	242. 59	20. 21	22. 17
19	F.	16	13. 22	249. 57	257. 0	23. 55	25. 12
20	Sa.	17	14. 17	264. 5	271. 11	26. 9	26. 44
21	Su.	18	15. 11	278. 15	285. 14	26. 58	26. 50
22	M.	19	16. 2	292. 7	298. 52	26. 23	25. 36
23	Tu.	20	16. 51	305. 27	311. 51	24. 33	23. 12
24	W.	21	17. 37	318. 6	324. 9	21. 40	19. 50
25	Th.	22	18. 21	330. 4	335. 48	17. 54	15. 41
26	F.	23	19. 2	341. 26	346. 58	13. 23	10. 56
27	Sa.	24	19. 43	352. 26	357. 52	8. 24	5. 45
28	Su.	25	20. 24	3. 17	8. 43	3. 3 S	0. 17 S
29	M.	26	21. 6	14. 13	19. 48	2. 30 N	5. 20 N
30	Tu.	27	21. 50	25. 30	31. 21	8. 5	10. 49
31	W.	28	22. 38	37. 23	43. 39	13. 28	16. 1

VII.

M A Y 1780.

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Days of the Month.	Days of the Week.	Semid. D at Noon.	Semid. D at Mid-night.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Prop. Lo. at Noon.	Prop. Lo. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	M.	15. 3	15. 8	55. 15	55. 31	5129	5108
2	Tu.	15. 12	15. 16	55. 46	56. 3	5089	5067
3	W.	15. 21	15. 26	56. 20	56. 37	5045	5023
4	Th.	15. 31	15. 35	56. 55	57. 13	5000	4977
5	F.	15. 40	15. 44	57. 29	57. 45	4957	4937
6	Sa.	15. 48	15. 52	58. 0	58. 14	4918	4901
7	Su.	15. 56	15. 59	58. 27	58. 40	4885	4869
8	M.	16. 2	16. 4	58. 49	58. 58	4858	4846
9	Tu.	16. 6	16. 8	59. 6	59. 13	4837	4828
10	W.	16. 10	16. 11	59. 19	59. 23	4821	4816
11	Th.	16. 12	16. 13	59. 27	59. 29	4811	4809
12	F.	16. 13	16. 13	59. 30	59. 29	4808	4809
13	Sa.	16. 12	16. 11	59. 28	59. 24	4810	4815
14	Su.	16. 10	16. 8	59. 19	59. 13	4821	4828
15	M.	16. 6	16. 3	59. 4	58. 54	4839	4852
16	Tu.	16. 0	15. 56	58. 42	58. 29	4866	4882
17	W.	15. 52	15. 47	58. 13	57. 57	4902	4922
18	Th.	15. 43	15. 37	57. 39	57. 20	4945	4968
19	F.	15. 32	15. 27	57. 2	56. 42	4991	5017
20	Sa.	15. 22	15. 17	56. 23	56. 5	5041	5064
21	Su.	15. 12	15. 7	55. 46	55. 29	5089	5111
22	M.	15. 3	14. 59	55. 13	55. 0	5132	5149
23	Tu.	14. 56	14. 53	54. 48	54. 39	5165	5177
24	W.	14. 51	14. 50	54. 31	54. 26	5187	5194
25	Th.	14. 49	14. 49	54. 23	54. 23	5198	5198
26	F.	14. 50	14. 51	54. 25	54. 30	5195	5189
27	Sa.	14. 53	14. 56	54. 38	54. 47	5178	5166
28	Su.	14. 59	15. 3	54. 59	55. 16	5149	5128
29	M.	15. 8	15. 13	55. 32	55. 49	5107	5085
30	Tu.	15. 18	15. 24	56. 9	56. 30	5059	5032
31	W.	15. 29	15. 36	56. 51	57. 13	5005	4977

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	Regulus.	76. 5. 53	74. 24. 20	72. 42. 37	71. 0. 43
7		62. 28. 41	60. 45. 49	59. 2. 49	57. 19. 42
8		48. 42. 26	46. 58. 40	45. 14. 50	43. 30. 54
9		34. 50. 43	33. 6. 37	31. 22. 32	29. 38. 32
10	Spica α	21. 0. 50			
10		74. 47. 37	73. 2. 7	71. 16. 35	69. 31. 1
11		60. 42. 29	58. 56. 41	57. 10. 52	55. 25. 2
12		46. 35. 53	44. 50. 6	43. 4. 22	41. 18. 41
13	Antares.	32. 31. 31			
13		78. 13. 19	76. 27. 1	74. 40. 45	72. 54. 30
14		64. 4. 0	62. 18. 5	60. 32. 16	58. 46. 31
15		49. 59. 17	48. 14. 11	46. 29. 14	44. 44. 26
16		36. 2. 58	34. 19. 15	32. 35. 46	30. 52. 32
17		22. 20. 25	20. 39. 4	18. 58. 10	17. 17. 46
18	Fomalhaut.	91. 56. 25	90. 19. 35	88. 43. 1	87. 6. 43
19		79. 9. 31	77. 34. 59	76. 0. 47	74. 26. 54
20		66. 42. 45	65. 11. 1	63. 39. 40	62. 9. 43
21		54. 40. 13	53. 11. 49	51. 43. 52	50. 16. 26
22		43. 7. 20	41. 43. 20	40. 19. 57	38. 57. 17
23	α Arietis.	93. 24. 59	91. 56. 27	90. 28. 5	88. 59. 51
24		81. 40. 48	80. 13. 23	78. 46. 5	77. 18. 53
25		70. 4. 7	68. 37. 23	67. 10. 42	65. 44. 5
26		58. 31. 36			
23	The Sun.	120. 44. 4	119. 20. 53	117. 57. 51	116. 34. 59
24		109. 42. 39	108. 20. 33	106. 58. 32	105. 36. 36
25		98. 47. 53	97. 26. 16	96. 4. 41	94. 43. 5
26		87. 54. 52	86. 33. 6	85. 11. 17	83. 49. 24
27		76. 58. 32	75. 35. 59	74. 13. 19	72. 50. 30
28		65. 53. 49	64. 29. 54	63. 5. 46	61. 41. 25
29		54. 36. 8	53. 10. 19	51. 44. 14	50. 17. 53
30		43. 1. 45	41. 33. 38	40. 5. 12	38. 36. 28

IX.

M A Y 1780.

[57]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	Regulus.	82. 50. 11	81. 9. 25	79. 28. 26	77. 47. 15
6		69. 18. 38	67. 36. 23	65. 53. 58	64. 11. 24
7		55. 36. 28	53. 53. 7	52. 9. 39	50. 26. 6
8		41. 46. 54	40. 2. 53	38. 18. 50	36. 34. 47
9	Spica μ	27. 54. 39	26. 10. 54	24. 27. 21	22. 43. 58
10		67. 45. 23	65. 59. 42	64. 14. 0	62. 28. 16
11		53. 39. 11	51. 53. 20	50. 7. 30	48. 21. 41
12		39. 33. 4	37. 47. 32	36. 2. 5	34. 16. 44
13	Antares.	71. 8. 18	69. 22. 8	67. 36. 2	65. 49. 59
14		57. 0. 52	55. 15. 18	53. 29. 51	51. 44. 30
15		42. 59. 47	41. 15. 18	39. 31. 0	37. 46. 53
16		29. 9. 32	27. 26. 46	25. 44. 18	24. 2. 11
17	Fomal- haut.	15. 37. 52			
17		98. 26. 1	96. 48. 18	95. 10. 47	93. 33. 29
18		85. 30. 41	83. 54. 57	82. 19. 30	80. 44. 22
19		72. 53. 21	71. 20. 9	69. 47. 20	68. 14. 52
20		60. 38. 10	59. 8. 2	57. 38. 20	56. 9. 3
21		48. 49. 31	47. 23. 6	45. 57. 16	42. 32. 0
22	α Arietis.	37. 35. 18			
22		99. 20. 46	97. 51. 34	96. 22. 32	94. 53. 40
23		87. 31. 47	86. 3. 51	84. 36. 2	83. 8. 21
24		75. 51. 47	74. 24. 45	72. 57. 48	71. 30. 55
25	The Sun.	64. 17. 31	62. 50. 59	61. 24. 29	59. 58. 2
23		115. 12. 15	113. 49. 40	112. 27. 12	111. 4. 52
24		104. 14. 46	102. 52. 58	101. 31. 13	100. 9. 31
25		93. 21. 30	91. 59. 53	90. 38. 15	89. 16. 35
26		82. 27. 27	81. 5. 23	79. 43. 12	78. 20. 56
27		71. 27. 31	70. 4. 22	68. 41. 2	67. 17. 31
28		60. 16. 51	58. 52. 3	57. 26. 59	56. 1. 41
29		48. 51. 15	47. 24. 19	45. 57. 5	44. 29. 34
30		37. 7. 25			

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Fomalhaut.	38. 23. 21	39. 46. 39	41. 10. 39	42. 35. 21
2		49. 48. 19	51. 16. 34	52. 45. 16	54. 14. 26
7	The Sun.	36. 57. 37	38. 33. 43	40. 9. 58	41. 46. 22
8		49. 50. 27	51. 27. 40	53. 5. 1	55. 42. 28
9		62. 51. 17	64. 29. 21	66. 7. 31	67. 45. 46
10		75. 58. 7	77. 36. 48	79. 15. 33	80. 54. 22
11		89. 9. 12	90. 48. 18	92. 27. 27	94. 6. 38
12		102. 22. 56	104. 2. 16	105. 41. 36	107. 20. 56
13		115. 37. 32	117. 16. 49	118. 56. 5	120. 35. 19
11	Pollux.	30. 7. 28	31. 53. 29	33. 39. 33	35. 25. 41
12		44. 17. 2	46. 3. 23	47. 49. 46	49. 36. 9
13		58. 28. 4	60. 14. 26	62. 0. 47	63. 47. 7
14		72. 38. 8	74. 24. 10	76. 10. 9	77. 56. 2
15	Regulus.	50. 31. 6	52. 15. 53	54. 0. 34	55. 45. 9
16		64. 26. 10	66. 9. 57	67. 53. 35	69. 37. 1
17		78. 11. 23	79. 53. 38	81. 35. 38	83. 17. 27
18		91. 42. 47			
18	Spica μ	37. 43. 27	39. 23. 12	41. 2. 44	42. 42. 4
19		50. 55. 11	52. 33. 4	54. 10. 41	55. 48. 2
20		63. 50. 46	65. 26. 30	67. 1. 57	68. 37. 9
21	Antares.	30. 35. 29	32. 8. 51	33. 42. 1	35. 14. 58
22		42. 56. 24	44. 28. 2	45. 59. 28	47. 30. 43
23		55. 4. 5	56. 34. 15	58. 4. 15	59. 34. 7
24		67. 1. 23	68. 30. 30	69. 59. 32	71. 28. 28
25		78. 52. 17	80. 20. 56	81. 49. 34	83. 18. 12
26		90. 41. 35	92. 10. 23	93. 39. 15	95. 8. 11
27		102. 34. 13			
27	α Aquilæ.	59. 36. 2	60. 44. 31	61. 53. 38	63. 3. 22
28		69. 0. 39	70. 13. 41	71. 27. 11	72. 41. 9
29		78. 57. 27	80. 13. 54	81. 30. 41	82. 47. 51
30		89. 18. 24			
30	Fomalhaut.	57. 24. 38	54. 54. 55	60. 25. 38	61. 56. 49
31		69. 39. 12	71. 12. 56	72. 47. 3	47. 21. 34
J. 1		82. 19. 45			

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Fomalhaut.	44. 0. 45	45. 26. 47	46. 53. 24	48. 20. 34
2		55. 44. 0			
7	The Sun.	43. 22. 55	44. 59. 36	46. 36. 25	48. 13. 22
8		56. 20. 2	57. 57. 42	59. 35. 28	61. 13. 20
9		69. 24. 6	71. 2. 30	72. 40. 58	74. 19. 30
10		82. 33. 14	84. 12. 9	85. 51. 8	87. 30. 9
11		95. 45. 51	97. 25. 5	99. 4. 21	100. 43. 38
12		109. 0. 17	110. 39. 37	112. 18. 56	113. 58. 14
13		122. 14. 32			
11	Pollux.	37. 11. 52	38. 58. 6	40. 44. 23	42. 30. 42
12		51. 22. 33	53. 8. 56	54. 55. 19	56. 41. 42
13		65. 33. 25	67. 19. 40	69. 5. 52	70. 52. 2
14		79. 41. 51			
14	Regulus.	43. 31. 16	45. 16. 18	47. 1. 18	48. 46. 14
15		57. 29. 38	59. 13. 58	60. 58. 11	62. 42. 14
16		71. 20. 17	73. 3. 21	74. 46. 14	76. 28. 54
17		84. 59. 0	86. 40. 19	88. 21. 23	90. 2. 12
18	Spica μ	44. 21. 11	46. 0. 3	47. 38. 41	49. 17. 3
19		57. 25. 8	59. 1. 57	60. 38. 29	62. 14. 46
20		70. 12. 4			
20	Antares.	24. 20. 0	25. 54. 10	27. 28. 8	29. 1. 54
21		36. 47. 42	38. 20. 12	39. 52. 29	41. 24. 33
22		49. 1. 45	50. 32. 36	52. 3. 16	53. 33. 46
23		61. 3. 50	62. 33. 24	64. 2. 51	65. 32. 10
24		72. 57. 20	74. 26. 8	75. 54. 54	77. 23. 37
25		84. 46. 49	86. 15. 27	87. 44. 8	89. 12. 50
26		96. 37. 11	98. 6. 17	99. 35. 29	101. 4. 48
27	α Aquilæ.	64. 13. 43	65. 24. 40	66. 36. 6	67. 48. 7
28		73. 55. 35	75. 10. 26	76. 25. 42	77. 41. 22
29		84. 5. 21	85. 23. 9	86. 41. 17	87. 59. 42
30	Fomalhaut.	63. 28. 27	65. 0. 31	66. 32. 59	68. 5. 53
31		75. 56. 28	77. 31. 45	79. 7. 23	80. 43. 24

Configurations of the SATELLITES of JUPITER
at 10 o' th' Clock in the Evening.

1		2.	1. ○	3.	4.
2			2. ○	1.	4. 3.
3		1.	○	4.	3.
4		4.	2. ○	3.	
5		4.	3. 2. 1.	○	
6		4.	3.	○	1. 2.
7	4.		3. 1.	○	2.
8	4.		2.	○ 3.	1.
9		4.	2.	○ 1.	3.
10		4.	1.	○	2. 3.
11			4. 2.	○	1. 3.
12			2. 1 8 3.	○	4.
13		3.		○	2. 1. 4.
14		3.	1.	○	2. 4.
15		2.	3.	○ 1.	4.
16	OI		2.	○	3. 4.
17			1.	○	2. 3. 4.
18				○ 2.	1. 3. 4.
19			2. 1. 3.	○	4.
20		3.	4.	○	2. 1.
21		3. 4.	1.	○	2.
22		4.	2. 3.	○ 1.	
23			2. 1.	○	3.
24			1.	○	2. 3.
25				○ 2.	1. 3.
26		4.	2. 1. 3.	○	
27		3. 4.		○ 2.	1.
28		3.	1. 4.	○	2.
29			2. 3.	○ 1.	4.
30			2. 1.	○	3. 4.
31				○ 1.	2. 3. 4.

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			New Moon — 2. 11. 56
			First Quarter — 9. 6. 2
			Full Moon — 16. 10. 51
			Last Quarter — 24. 12. 16
1	Th.	Nicomede.	
2	F.		
3	Sa.		
4	Su.	[1738. 2d S. aft. T. K. Geo. III. b.	D. Other Phenomena.
5	M.	Pr. Ern. Aug. b. Bonif.	2. ☾ ♂ 23 ^h . 16 ^l .
6	Tu.	Trin. 3 ret.	5. ☾ ♀ 13 ^h . 11 ^l .
7	W.		7. ☾ ♀ 12 ^h . 52 ^l .
8	Th.		10. ☾ ♀ 0 ^h . 43 ^l .
9	F.		12. ☾ ♀ 6 ^h . 50 ^l .
10	Sa.	Prs. Amelia born 1711.	13. ♀ ♂ diff. Lat. 1°. 17 ^l .
			14. ☾ ♀ 0 ^h . 29 ^l .
			14. ♀ Stationary.
11	Su.	3d Su. after Tr. St. Barn.	15. ☾ ♀ Ophiuchi 20 ^h . 3 ^l .
12	M.	Trinity Term, 4 ret.	17. ☾ ♀ 0 ^h . 12 ^l .
13	Tu.		17. ☾ ♀ 7 ^h . 35 ^l .
14	W.	Trinity Term ends.	17. ☾ ♀ 11 ^h . 48 ^l .
15	Th.		18. ♀ 132 ♂ diff. Lat. 24 ^l .
16	F.		20. ☉ enters ♄ at 9 ^h . 57 ^l .
17	Sa.	St. Alban.	20. ☾ ♀ 14 ^h . 5 ^l .
			22. ☾ ♀ 18 ^h . 41 ^l .
18	Su.	4th Sunday after Trinity.	22. ☾ ♀ 19 ^h . 35 ^l .
19	M.		22. ☾ ♀ 19 ^h . 43 ^l .
20	Tu.	Tr. of Edw. K. W. Sax.	24. ♀ ♀ II diff. Lat. 37 ^l .
21	W.		27. ♀ ♂ diff. Lat. 42 ^l .
22	Th.		30. ☾ 125 ♂ 13 ^h . 37 ^l .
23	F.		
24	Sa.	Nativity of St. John Bapt.	
25	Su.	5th Sunday after Trinity.	
26	M.		
27	Tu.		
28	W.		
29	Th.	St. Peter.	
30	F.		

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Th.	2. 11. 27. 30	4. 39. 39, 5	22. 11. 4	2. 33, 3	9, 5
2	F.	2. 12. 24. 57	4. 43. 45, 6	22. 18. 44	2. 23, 8	9, 8
3	Sa.	2. 13. 22. 23	4. 47. 52, 0	22. 26. 1	2. 14, 0	10, 2
4	Su.	2. 14. 19. 47	4. 51. 58, 8	22. 32. 54	2. 3, 8	10, 5
5	M.	2. 15. 17. 11	4. 56. 5, 9	22. 39. 23	1. 53, 3	10, 8
6	Tu.	2. 16. 14. 34	5. 0. 13, 2	22. 45. 29	1. 42, 5	11, 1
7	W.	2. 17. 11. 56	5. 4. 20, 9	22. 51. 10	1. 31, 4	11, 4
8	Th.	2. 18. 9. 17	5. 8. 28, 9	22. 56. 28	1. 20, 0	11, 6
9	F.	2. 19. 6. 37	5. 12. 37, 1	23. 1. 21	1. 8, 4	11, 7
10	Sa.	2. 20. 3. 55	5. 16. 45, 5	23. 5. 50	0. 56, 7	12, 0
11	Su.	2. 21. 1. 13	5. 20. 54, 1	23. 9. 54	0. 44, 9	12, 2
12	M.	2. 21. 58. 30	5. 25. 2, 9	23. 13. 35	0. 32, 5	12, 3
13	Tu.	2. 22. 55. 46	5. 29. 11, 8	23. 16. 50	0. 20, 2	12, 5
14	W.	2. 23. 53. 1	5. 33. 20, 9	23. 19. 41	0. 7, 7	12, 6
15	Th.	2. 24. 50. 15	5. 37. 30, 0	23. 22. 8	Ad: 4, 9	12, 7
16	F.	2. 25. 47. 29	5. 41. 39, 2	23. 24. 9	0. 17, 6	12, 7
17	Sa.	2. 26. 44. 42	5. 45. 48, 5	23. 25. 46	0. 30, 3	12, 8
18	Su.	2. 27. 41. 55	5. 49. 57, 9	23. 26. 58	0. 43, 1	12, 8
19	M.	2. 28. 39. 7	5. 54. 7, 2	23. 27. 46	0. 55, 9	12, 9
20	Tu.	2. 29. 36. 20	5. 58. 16, 8	23. 28. 9	1: 8, 8	12, 8
21	W.	3. 0. 33. 32	6. 2. 26, 2	23. 28. 7	1. 21, 6	12, 9
22	Th.	3. 1. 30. 45	6. 6. 35, 7	23. 27. 40	1. 34, 5	12, 8
23	F.	3. 2. 27. 57	6. 10. 45, 1	23. 26. 48	1. 47, 3	12, 7
24	Sa.	3. 3. 25. 10	6. 14. 54, 4	23. 25. 32	2. 0, 0	12, 7
25	Su.	3. 4. 22. 22	6. 19. 3, 7	23. 23. 51	2. 12, 7	12, 6
26	M.	3. 5. 19. 35	6. 23. 12, 9	23. 21. 45	2. 25, 3	12, 4
27	Tu.	3. 6. 16. 48	6. 27. 21, 8	23. 19. 14	2. 37, 7	12, 3
28	W.	3. 7. 14. 1	6. 31. 30, 7	23. 16. 19	2. 50, 0	12, 1
29	Th.	3. 8. 11. 14	6. 35. 39, 4	23. 12. 59	3. 2, 1	11, 9
30	F.	3. 9. 8. 28	6. 39. 47, 9	23. 9. 15	3. 14, 0	

III. JUNE 1780. [63]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Ditance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 48. 7	1. 8. 3	2. 23. 6	0,006395	1. 22. 0
7	15. 48. 1	1. 8. 6	2. 23. 3	0,006700	1. 21. 41
13	15. 47. 5	1. 8. 8	2. 23. 2	0,006923	1. 21. 22
19	15. 47. 1	1. 8. 8	2. 23. 0	0,007096	1. 21. 3
25	15. 46. 9	1. 8. 8	2. 23. 0	0,007213	1. 20. 44

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	16. 36. 58	2	3. 48. 56	*6	9. 37. 55 I
*4	11. 5. 25	5	17. 5. 55	*6	11. 22. 57 E
6	5. 33. 50	9	6. 22. 54	13	13. 35. 49 I
8	0. 2. 10	12	19. 39. 54	13	15. 20. 3 E
9	18. 30. 33	16	6. 39. 35 I	20	17. 33. 40 I
*11	12. 58. 52	*16	8. 56. 56 E	20	19. 17. 5 E
13	7. 27. 15	19	19. 56. 43 I	27	21. 31. 28 I
15	1. 55. 35	19	22. 13. 59 E	27	23. 14. 9 E
16	20. 23. 56	*23	9. 14. 5 I	IV. Satellite. Conj.	
18	14. 52. 16	*23	11. 31. 16 E		
*20	9. 20. 35	26	22. 31. 25 I	8	13. 47 Inf.
22	3. 48. 55	27	0. 48. 30 E	16	21. 44 Sup.
23	22. 17. 17	*30	11. 48. 45 I	25	6. 36 Inf.
25	16. 45. 37	30	14. 5. 45 E		
*27	11. 13. 56				
29	5. 42. 14				

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JUNE 1780.

IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Sup. δ 22 ^d . 0 ^h .						
1	11. 6. 0	6. 34 S	1. 20. 21	2. 23 S	15. 33 N	22. 37
4	11. 18. 58	5. 52	1. 25. 14	1. 56	17. 13	22. 44
7	0. 3. 12	4. 45	2. 0. 31	1. 25	18. 53	22. 54
10	0. 18. 46	3. 11	2. 6. 10	0. 52	20. 30	23. 5
13	1. 5. 41	1. 14 S	2. 12. 10	0. 19 S	21. 58	23. 18
16	1. 23. 44	0. 59 N	2. 18. 26	0. 14 N	23. 12	23. 33
19	2. 12. 31	3. 10	2. 24. 56	0. 44	24. 6	23. 49
22	3. 1. 25	5. 1	3. 1. 30	1. 10	24. 38	0. 4
25	3. 19. 48	6. 18	3. 8. 1	1. 30	24. 43	0. 16
28	4. 7. 7	6. 55	3. 14. 23	1. 44	24. 25	0. 31
30	4. 17. 54	7. 0	3. 18. 31	1. 50	24. 0	0. 42
VENUS. Greatest Elong. 7 ^d .						
1	6. 27. 15	2. 30 N	3. 26. 46	2. 33 N	23. 20 N	3. 18
7	7. 6. 53	2. 5	4. 2. 23	2. 17	21. 53	3. 17
13	7. 16. 29	1. 36	4. 7. 39	1. 54	20. 14	3. 13
19	7. 26. 4	1. 5	4. 12. 31	1. 24	18. 25	3. 8
25	8. 5. 37	0. 32	4. 16. 53	0. 45	16. 30	2. 59
MARS.						
1	3. 3. 50	1. 20 N	2. 25. 8	0. 50 N	24. 13 N	0. 59
7	3. 6. 42	1. 23	2. 29. 8	0. 52	24. 20	0. 52
13	3. 9. 33	1. 27	3. 3. 6	0. 54	24. 20	0. 44
19	3. 12. 22	1. 30	3. 7. 3	0. 56	24. 13	0. 37
25	3. 15. 9	1. 33	3. 11. 0	0. 57	23. 58	0. 29
JUPITER.						
1	6. 26. 9	1. 16 N	6. 17. 28	1. 26 N	5. 33 S	8. 26
7	6. 26. 37	1. 15	6. 17. 22	1. 24	5. 32	8. 0
13	6. 27. 4	1. 15	6. 17. 15	1. 23	5. 31	7. 35
19	6. 27. 31	1. 15	6. 17. 19	1. 21	5. 34	7. 11
25	6. 27. 59	1. 15	6. 17. 29	1. 19	5. 39	6. 47
SATURN.						
1	8. 5. 34	1. 49 N	8. 4. 55	2. 1 N	19. 10 S	11. 32
7	8. 5. 45	1. 49	8. 4. 28	2. 0	19. 5	11. 5
13	8. 5. 56	1. 48	8. 4. 3	2. 0	19. 1	10. 38
19	8. 6. 7	1. 48	8. 3. 40	1. 59	18. 58	10. 12
25	8. 6. 18	1. 47	8. 3. 18	1. 59	18. 55	9. 46

V. JUNE 1780. [65]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Th.	1. 22. 33. 0	1. 29. 15. 34	0. 1. 56 S	0. 35. 1 N
2	F.	2. 6. 3. 16	2. 12. 55. 49	1. 11. 58 N	1. 48. 15
3	Sa.	2. 19. 52. 52	2. 26. 53. 59	2. 23. 17	2. 56. 31
4	Su.	3. 3. 58. 40	3. 11. 6. 23	3. 27. 13	3. 54. 57
5	M.	3. 18. 16. 27	3. 25. 28. 11	4. 19. 9	4. 39. 19
6	Tu.	4. 2. 40. 57	4. 9. 54. 4	4. 55. 5	5. 6. 12
7	W.	4. 17. 6. 58	4. 24. 19. 5	5. 12. 28	5. 13. 48
8	Th.	5. 1. 29. 56	5. 8. 39. 5	5. 10. 13	5. 1. 50
9	F.	5. 15. 46. 11	5. 22. 50. 56	4. 48. 50	4. 31. 31
10	Sa.	5. 29. 53. 8	6. 6. 52. 36	4. 10. 12	3. 45. 15
11	Su.	6. 13. 49. 13	6. 20. 42. 52	3. 17. 9	2. 46. 25
12	M.	6. 27. 33. 30	7. 4. 21. 5	2. 13. 29	1. 38. 58
13	Tu.	7. 11. 5. 35	7. 17. 46. 59	1. 3. 15 N	0. 26. 59 N
14	W.	7. 24. 25. 17	8. 1. 0. 26	0. 9. 23 S	0. 45. 12 S
15	Th.	8. 7. 32. 27	8. 14. 1. 19	1. 20. 7	1. 53. 45
16	F.	8. 20. 27. 3	8. 26. 49. 39	2. 25. 35	2. 55. 18
17	Sa.	9. 3. 9. 8	9. 9. 25. 33	3. 22. 34	3. 47. 11
18	Su.	9. 15. 38. 56	9. 21. 49. 24	4. 8. 45	4. 27. 16
19	M.	9. 27. 57. 7	10. 4. 2. 14	4. 42. 33	4. 54. 30
20	Tu.	10. 10. 5. 1	10. 16. 5. 42	5. 3. 4	5. 8. 14
21	W.	10. 22. 4. 38	10. 28. 2. 13	5. 9. 59	5. 8. 24
22	Th.	11. 3. 58. 52	11. 9. 55. 6	5. 3. 28	4. 55. 16
23	F.	11. 15. 51. 20	11. 21. 48. 13	4. 43. 55	4. 29. 28
24	Sa.	11. 27. 46. 18	0. 3. 46. 12	4. 12. 4	3. 51. 48
25	Su.	0. 9. 48. 27	0. 15. 53. 44	3. 28. 50	3. 3. 18
26	M.	0. 22. 2. 39	0. 28. 15. 48	2. 35. 25	2. 5. 24
27	Tu.	1. 4. 33. 42	1. 10. 56. 53	1. 33. 27	0. 59. 57 S
28	W.	1. 17. 25. 47	1. 24. 0. 47	0. 25. 11 S	0. 10. 25 N
29	Th.	2. 0. 42. 9	2. 7. 30. 0	0. 46. 25 N	1. 22. 18
30	F.	2. 14. 24. 19	2. 21. 24. 53	1. 57. 30	2. 31. 25

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Ascen. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Th.	29	23. 31	50. 9	56. 54	18. 24 N	20. 35
2	F.	1	6	63. 56	71. 15	22. 31	24. 10
3	Sa.	2	0. 29	78. 47	86. 33	25. 29	26. 24
4	Su.	3	1. 29	94. 27	102. 27	26. 52	26. 54
5	M.	4	2. 31	110. 27	118. 23	26. 29	25. 38
6	Tu.	5	3. 32	126. 12	133. 50	24. 22	22. 42
7	W.	6	4. 30	141. 15	148. 27	20. 41	18. 21
8	Th.	7	5. 24	155. 25	162. 12	15. 46	12. 59
9	F.	8	6. 15	168. 48	175. 14	10. 3	6. 59
10	Sa.	9	7. 3	181. 33	187. 48	3. 53 N	0. 43 N
11	Su.	10	7. 50	194. 0	200. 11	2. 26 S	5. 32 S
12	M.	11	8. 37	206. 23	212. 39	8. 33	11. 26
13	Tu.	12	9. 25	219. 1	225. 27	14. 10	16. 43
14	W.	13	10. 16	232. 0	238. 42	19. 3	21. 7
15	Th.	14	11. 8	245. 30	252. 25	22. 55	24. 23
16	F.	15	12. 2	259. 25	266. 28	25. 33	26. 21
17	Sa.	16	12. 56	273. 32	280. 33	26. 48	26. 54
18	Su.	17	13. 49	287. 31	294. 22	26. 40	26. 5
19	M.	18	14. 39	301. 5	307. 38	25. 13	24. 2
20	Tu.	19	15. 26	314. 0	320. 12	22. 37	20. 57
21	W.	20	16. 11	326. 13	332. 4	19. 3	16. 59
22	Th.	21	16. 53	337. 47	343. 22	14. 47	12. 25
23	F.	22	17. 34	348. 51	354. 15	9. 57	7. 23
24	Sa.	23	18. 13	359. 38	5. 0	4. 44 S	2. 3 S
25	Su.	24	18. 54	10. 23	15. 49	0. 42 N	3. 26 N
26	M.	25	19. 36	21. 21	27. 0	6. 12	8. 55
27	Tu.	26	20. 22	32. 49	38. 50	11. 35	14. 11
28	W.	27	21. 13	45. 5	51. 35	16. 39	18. 58
29	Th.	28	22. 8	58. 22	65. 27	21. 5	22. 57
30	F.	29	23. 6	72. 50	80. 28	24. 30	25. 42

VII. JUNE 1780. [67]

Days of the Month.	Days of the Week.	Semid. at Noon.	Semid. at Mid-night.	Hor. Par. at Noon.	Hor. Par. at Midnight.	Proport. Lo. at Noon.	Proport. Lo. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Th.	15. 41	15. 47	57. 35	57. 57	4950	4922
2	F.	15. 53	15. 58	58. 17	58. 35	4897	4875
3	Sa.	16. 2	16. 7	58. 53	59. 8	4853	4834
4	Su.	16. 10	16. 13	59. 21	59. 31	4819	4806
5	M.	16. 15	16. 17	59. 39	59. 45	4797	4789
6	Tu.	16. 18	16. 18	59. 48	59. 49	4786	4784
7	W.	16. 18	16. 16	59. 47	59. 44	4787	4790
8	Th.	16. 15	16. 13	59. 39	59. 32	4797	4805
9	F.	16. 11	16. 9	59. 25	59. 16	4813	4824
10	Sa.	16. 6	16. 3	59. 6	58. 55	4837	4850
11	Su.	16. 0	15. 57	58. 44	58. 32	4864	4878
12	M.	15. 53	15. 49	58. 19	58. 4	4895	4913
13	Tu.	15. 46	15. 42	57. 51	57. 37	4930	4947
14	W.	15. 38	15. 34	57. 21	57. 6	4967	4986
15	Th.	15. 29	15. 25	56. 51	56. 35	5005	5026
16	F.	15. 21	15. 17	56. 19	56. 4	5046	5065
17	Sa.	15. 12	15. 8	55. 49	55. 34	5085	5104
18	Su.	15. 5	15. 1	55. 20	55. 7	5123	5140
19	M.	14. 58	14. 55	54. 55	54. 44	5155	5170
20	Tu.	14. 52	14. 51	54. 35	54. 28	5182	5191
21	W.	14. 49	14. 48	54. 22	54. 19	5199	5203
22	Th.	14. 48	14. 48	54. 18	54. 20	5205	5202
23	F.	14. 49	14. 51	54. 23	54. 29	5198	5190
24	Sa.	14. 53	14. 56	54. 37	54. 48	5179	5165
25	Su.	15. 0	15. 4	55. 1	55. 18	5148	5125
26	M.	15. 9	15. 15	55. 36	55. 56	5102	5076
27	Tu.	15. 21	15. 27	56. 19	56. 42	5046	5017
28	W.	15. 34	15. 41	57. 7	57. 33	4985	4952
29	Th.	15. 48	15. 55	57. 59	58. 24	4919	4889
30	F.	16. 2	16. 8	58. 51	59. 12	4855	4830

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	Regulus.	52. 50. 31	51. 4. 24	49. 18. 10	47. 31. 50
5		38. 39. 4	36. 52. 24	35. 5. 48	33. 19. 15
6		24. 28. 6			
6	Spica μ	78. 19. 36	76. 32. 4	74. 44. 34	72. 57. 5
7		64. 0. 12	62. 13. 0	60. 25. 53	58. 38. 50
8		49. 45. 8	47. 58. 45	46. 12. 31	44. 26. 25
9		35. 38. 32	33. 53. 31	32. 8. 47	30. 24. 19
10	Antares.	21. 46. 57			
10		67. 18. 52	65. 34. 3	63. 49. 22	62. 4. 52
11		53. 24. 42	51. 41. 10	49. 57. 49	48. 14. 38
12		39. 41. 30	37. 59. 27	36. 17. 37	34. 36. 0
13	α Aquilæ.	26. 11. 23			
13		78. 40. 7	77. 17. 17	75. 54. 50	74. 32. 46
14		67. 49. 30	66. 30. 26	65. 12. 2	63. 54. 17
15	Fomal- haut.	57. 36. 52			
15		83. 11. 58	81. 37. 57	80. 4. 10	78. 30. 38
16		70. 46. 47	69. 14. 50	67. 43. 10	66. 11. 50
17	α Pegasi.	58. 39. 59			
17		79. 10. 29	77. 44. 32	76. 18. 53	74. 53. 32
18		67. 51. 45	66. 28. 28	65. 5. 35	63. 43. 6
19	α Arietis.	56. 57. 26			
19		97. 19. 54	95. 50. 30	94. 21. 15	92. 52. 10
20		85. 29. 0	84. 0. 48	82. 32. 44	81. 4. 49
21		73. 47. 8	72. 19. 57	70. 52. 52	69. 25. 53
22		62. 12. 24	60. 45. 57	59. 19. 35	57. 53. 18
23	Aldeba- ran.	50. 42. 57			
23		80. 28. 27	79. 0. 11	77. 31. 51	76. 3. 28
24	The Sun.	68. 40. 19	67. 11. 24	65. 42. 20	64. 13. 8
22		117. 24. 55	116. 3. 27	114. 42. 0	113. 20. 33
23		106. 33. 8	105. 11. 32	103. 49. 51	102. 28. 6
24		95. 37. 58	94. 15. 35	92. 53. 3	91. 30. 23
25		84. 34. 31	83. 10. 46	81. 46. 48	80. 22. 37
26		73. 17. 59	71. 52. 16	70. 26. 15	68. 59. 57
27		61. 43. 47	60. 15. 34	58. 47. 1	57. 18. 7
28		49. 48. 19	48. 17. 16	46. 45. 50	45. 14. 2
29		37. 29. 30			

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	Regulus.	45. 45. 23	43. 58. 52	42. 12. 18	40. 25. 42
5		31. 32. 45	29. 46. 21	28. 0. 7	26. 14. 2
6	Spica μ	71. 9. 37	69. 22. 11	67. 34. 48	65. 47. 29
7		56. 51. 53	55. 5. 1	53. 18. 17	51. 31. 39
8		42. 40. 29	40. 54. 42	39. 9. 7	37. 23. 44
9		28. 40. 8	26. 56. 16	25. 12. 47	23. 29. 40
10	Antares.	60. 20. 30	58. 36. 18	56. 52. 16	55. 8. 24
11		46. 31. 38	44. 48. 49	43. 6. 11	41. 23. 45
12		32. 54. 36	31. 13. 26	29. 32. 30	27. 51. 49
13	α Aquilæ.	73. 11. 8	71. 49. 57	70. 29. 17	69. 9. 8
14		62. 37. 13	61. 20. 54	60. 5. 23	58. 50. 42
15	Romal- haut.	76. 57. 20	75. 24. 17	73. 51. 31	72. 19. 1
16		64. 40. 47	63. 10. 4	61. 39. 42	60. 9. 40
17	α Pegasi.	73. 28. 30	72. 3. 47	70. 39. 25	69. 15. 24
18		62. 21. 4	60. 59. 28	59. 38. 18	58. 17. 38
19	α Arietis.	91. 23. 14	89. 54. 27	88. 25. 49	86. 57. 20
20		79. 37. 1	78. 9. 22	76. 41. 50	75. 14. 25
21		67. 59. 0	66. 32. 13	65. 5. 31	63. 38. 55
22		56. 27. 5	55. 0. 57	53. 34. 52	52. 8. 53
23	Aldeba- ran.	74. 35. 1	73. 6. 29	71. 37. 52	70. 9. 8
24		62. 43. 46			
21	The Sun.	122. 51. 3	121. 29. 28	120. 7. 55	118. 46. 24
22		111. 59. 7	110. 37. 40	109. 16. 11	107. 54. 40
23		101. 6. 16	99. 44. 22	98. 22. 21	97. 0. 14
24		90. 7. 33	88. 44. 34	87. 21. 24	86. 58. 3
25		78. 58. 12	77. 33. 32	76. 8. 37	74. 43. 26
26		67. 33. 21	66. 6. 26	64. 39. 12	63. 11. 39
27		55. 48. 53	54. 19. 17	52. 49. 19	51. 19. 0
28		43. 41. 52	42. 9. 20	40. 36. 25	39. 3. 9

Distances of D's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
6	The Sun.	46. 38. 24	48. 19. 4	49. 59. 43	51. 40. 22
7		60. 3. 15	61. 43. 42	63. 24. 5	65. 4. 24
8		73. 24. 49	75. 4. 38	76. 44. 20	78. 23. 57
9		86. 40. 17	88. 19. 11	89. 57. 56	91. 36. 34
10		99. 47. 39	101. 25. 26	103. 3. 4	104. 40. 32
11		112. 45. 36	114. 22. 8	115. 58. 30	117. 34. 43
10	Regulus.	33. 17. 9	35. 1. 1	36. 44. 49	38. 28. 34
11		47. 6. 0	48. 49. 9	50. 32. 10	52. 15. 3
12		60. 47. 23	62. 29. 24	64. 11. 14	65. 52. 56
13		74. 18. 50	75. 59. 29	77. 39. 58	79. 20. 15
14		87. 38. 57			
14	Spica 𐌸	33. 41. 17	35. 19. 41	36. 58. 0	38. 36. 9
15		46. 44. 45	48. 21. 59	49. 59. 2	51. 35. 55
16		59. 37. 25	61. 13. 8	62. 48. 39	64. 23. 58
17		72. 17. 28	73. 51. 33	75. 25. 25	76. 59. 5
18		84. 44. 22			
18	Antares.	38. 50. 3	40. 22. 27	41. 54. 40	43. 26. 43
19		51. 4. 22	52. 35. 23	54. 6. 14	55. 36. 56
20		63. 8. 14	64. 38. 4	66. 7. 47	67. 37. 22
21		75. 3. 42	76. 32. 41	78. 1. 36	79. 30. 28
22		86. 53. 59	88. 22. 35	89. 51. 11	91. 19. 47
23		98. 42. 57			
23	α Aquilæ.	56. 36. 47	57. 43. 8	58. 50. 8	59. 57. 45
24		65. 44. 42	66. 55. 41	68. 7. 8	69. 19. 4
25		75. 25. 4	76. 39. 27	77. 54. 12	79. 9. 19
26		85. 29. 54	86. 46. 58	88. 4. 18	89. 21. 54
27		95. 53. 37			
27	Fomalhaut.	65. 3. 53	66. 35. 0	68. 6. 33	69. 38. 33
28		77. 25. 1	78. 59. 36	80. 34. 35	82. 9. 59
29		90. 13. 3	91. 50. 51	93. 29. 1	95. 7. 33
30		103. 25. 22	105. 5. 53	106. 46. 40	108. 27. 43
J. 1		116. 56. 20			

XI.

JUNE 1780.

[71]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	The Sun.	39. 55. 56	41. 36. 31	43. 7. 7	44. 57. 45
6		53. 21. 1	55. 1. 38	56. 42. 13	58. 22. 45
7		66. 44. 39	68. 24. 49	70. 4. 54	71. 44. 54
8		80. 3. 27	81. 42. 50	83. 22. 6	85. 1. 15
9		93. 15. 4	94. 53. 25	96. 31. 39	98. 9. 43
10		106. 17. 52	107. 55. 2	109. 32. 3	111. 8. 54
11		119. 10. 45			
9	Regulus.	26. 21. 38	28. 5. 30	29. 49. 23	31. 33. 16
10		40. 12. 16	41. 55. 51	43. 39. 20	45. 22. 43
11		53. 57. 48	55. 40. 25	57. 22. 53	59. 5. 13
12		67. 34. 26	69. 15. 48	70. 56. 59	72. 38. 0
13		81. 0. 22	82. 40. 18	84. 20. 2	85. 59. 35
14	Spica α	40. 14. 11	41. 52. 4	43. 29. 47	45. 7. 21
15		53. 12. 36	54. 49. 6	56. 25. 24	58. 1. 30
16		65. 59. 5	67. 33. 59	69. 8. 41	70. 43. 11
17		78. 32. 33	80. 5. 49	81. 38. 52	83. 11. 43
18	Antares.	44. 58. 35	46. 30. 17	48. 1. 49	49. 33. 10
19		57. 7. 29	58. 37. 53	60. 8. 8	61. 38. 15
20		69. 6. 51	70. 36. 12	72. 5. 28	73. 34. 38
21		80. 59. 15	82. 27. 59	83. 56. 41	85. 25. 21
22		92. 48. 22	94. 16. 58	95. 45. 36	97. 14. 16
23	α Aquilæ.	61. 6. 1	62. 14. 52	63. 24. 16	64. 34. 13
24		70. 31. 27	71. 44. 15	72. 57. 27	74. 11. 3
25		80. 24. 47	81. 40. 35	82. 56. 42	84. 13. 9
26		90. 39. 47	91. 57. 55	93. 16. 15	94. 34. 50
27	Fomal- haut.	71. 10. 59	72. 43. 51	74. 17. 9	75. 50. 52
28		83. 45. 48	85. 22. 1	86. 58. 38	88. 35. 39
29		96. 46. 27	98. 25. 41	100. 5. 15	101. 45. 9
30		110. 9. 1	111. 50. 32	113. 32. 17	115. 14. 13

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JUNE 1780.

XII.

Configurations of the SATELLITES of JUPITER at 11 o' Clock at Night.

1		3	4	1	2
2	4	2	3	1	
3	1	4	2	3	
4	4	1	2	3	
5	4	2	1	3	
6	4	2	1	3	
7	3	4	2	1	
8	3	1	4	2	
9	2	3	1	4	
10	2	1	3	4	
11	1.0		2	3	4
12			1	2	3
13	3.0	2	1		4
14	3		1	2	4
15	3	1		2	4
16		3	2	4	1
17		2	1	3	
18	4		1	2	3
19	4		1	2	3
20	4	2	1	3	
21	4	3	2	1	
22	4	3	1	2	
23	4	3	2	1	
24		2	4	1	
25			4	2	3
26	1.0		2	4	3
27		2	1	3	4
28		3	2	1	4
29		3	1	2	4
30	2.0	3		1	4

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon. D. H. M.
1	Sa.		New Moon — 1. 20. 34
2	Su.	6th Sunday after Trinity.	First Quarter — 8. 11. 15
3	M.	[Visit. of B. V. Mary.	Full Moon — 15. 23. 59
4	Tu.	Camb. Commencement.	Last Quarter — 24. 3. 37
5	W.	[Transl. of S. Martin.	New Moon — 31. 3. 52
6	Th.		D. Other Phenomena.
7	F.	Cam. Term ends.	4. ☾ 19 ^h . 50 ['] .
8	Sa.		7. ☾ 6 ^h . 20 ['] .
9	Su.	7th Sunday after Trinity.	☾ 17 ^h . 52 ['] .
10	M.	Oxford Act.	8. ☾ 7 ^h . 43 ['] .
11	Tu.		9. ☾ 12 ^h . 10 ['] .
12	W.		☾ 16 ^h . 33 ['] .
13	Th.		10. ☾ 7 ^h . 8 ['] .
14	F.		11. ☾ 6 ^h . 13 ['] .
15	Sa.	Swithin. Oxf. T. ends.	☾ 11 ^h . 12 ['] .
16	Su.	8th Sunday after Trinity.	☾ 15 ^h . 5 ['] .
17	M.		13. ☾ Ophiuchi 2 ^h . 20 ['] .
18	Tu.		14. ☾ 14 ^h . 17 ['] .
19	W.		☾ 18 ^h . 34 ['] .
20	Th.	Margaret,	☾ 23 ^h . 19 ['] .
21	F.		17. ☾ 21 ^h . 7 ['] .
22	Sa.	Magdalen.	18. ☾ diff. Lat. 37 ['] .
23	Su.	9th Sunday after Trinity.	20. ☾ 1 ad ↓ 1 ^h . 43 ['] .
24	M.		☾ 2 ad ↓ 2 ^h . 37 ['] .
25	Tu.	St. James.	☾ 3 ad ↓ 2 ^h . 45 ['] .
26	W.	St. Anne.	☾ Stationary.
27	Th.		21. ☾ enters ☾ at 20 ^h . 48 ['] .
28	F.		22. ☾ a ☾ diff. Lat. 25 ['] .
29	Sa.		27. ☾ 125 ☾ 23 ^h . 37 ['] .
30	Su.	10th Sunday after Trinity.	29. ☾ ☾ 0 ^h . 7 ['] .
31	M.		

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Sa.	3. 10. 5. 41	6. 43. 56, 2	23. 5. 6	3. 25, 6	
2	Su.	3. 11. 2. 55	6. 48. 4, 1	23. 0. 34	3. 37, 0	11, 4
3	M.	3. 12. 0. 9	6. 52. 11, 8	22. 55. 37	3. 48, 1	11, 1
4	Tu.	3. 12. 57. 22	6. 56. 19, 2	22. 50. 16	3. 58, 9	10, 8
5	W.	3. 13. 54. 35	7. 0. 26, 2	22. 44. 31	4. 9, 3	10, 4
6	Th.	3. 14. 51. 49	7. 4. 32, 9	22. 38. 23	4. 19, 4	10, 1
7	F.	3. 15. 49. 3	7. 8. 39, 2	22. 31. 51	4. 29, 1	9, 7
8	Sa.	3. 16. 46. 16	7. 12. 45, 1	22. 24. 56	4. 38, 4	9, 3
9	Su.	3. 17. 43. 29	7. 16. 50, 5	22. 17. 38	4. 47, 3	8, 9
10	M.	3. 18. 40. 42	7. 20. 55, 5	22. 9. 56	4. 55, 7	8, 4
11	Tu.	3. 19. 37. 55	7. 25. 0, 0	22. 1. 52	5. 3, 6	7, 9
12	W.	3. 20. 35. 8	7. 29. 4, 1	21. 53. 26	5. 11, 1	7, 5
13	Th.	3. 21. 32. 21	7. 33. 7, 7	21. 44. 37	5. 18, 2	7, 1
14	F.	3. 22. 29. 34	7. 37. 10, 8	21. 35. 25	5. 24, 7	6, 5
15	Sa.	3. 23. 26. 48	7. 41. 13, 4	21. 25. 52	5. 30, 7	6, 0
16	Su.	3. 24. 24. 2	7. 45. 15, 4	21. 15. 56	5. 36, 2	5, 5
17	M.	3. 25. 21. 16	7. 49. 17, 0	21. 5. 39	5. 41, 1	4, 9
18	Tu.	3. 26. 18. 31	7. 53. 18, 0	20. 55. 0	5. 45, 6	4, 5
19	W.	3. 27. 15. 46	7. 57. 18, 5	20. 44. 0	5. 49, 5	3, 9
20	Th.	3. 28. 13. 3	8. 1. 18, 4	20. 32. 39	5. 52, 9	3, 4
21	F.	3. 29. 10. 20	8. 5. 17, 8	20. 20. 58	5. 55, 7	2, 8
22	Sa.	4. 0. 7. 38	8. 9. 16, 7	20. 8. 56	5. 58, 0	2, 3
23	Su.	4. 1. 4. 58	8. 13. 15, 1	19. 56. 34	5. 59, 8	1, 8
24	M.	4. 2. 2. 18	8. 17. 12, 8	19. 43. 52	6. 1, 0	1, 2
25	Tu.	4. 2. 59. 39	8. 21. 10, 0	19. 30. 50	6. 1, 6	0, 6
26	W.	4. 3. 57. 2	8. 25. 6, 6	19. 17. 28	6. 1, 7	0, 1
27	Th.	4. 4. 54. 26	8. 29. 2, 7	19. 3. 47	6. 1, 2	0, 5
28	F.	4. 5. 51. 50	8. 32. 58, 2	18. 49. 47	6. 0, 2	1, 0
29	Sa.	4. 6. 49. 16	8. 36. 53, 1	18. 35. 28	5. 58, 6	1, 6
30	Su.	4. 7. 46. 43	8. 40. 47, 4	18. 20. 51	5. 56, 3	2, 3
31	M.	4. 8. 44. 11	8. 44. 41, 0	18. 5. 56	5. 53, 4	2, 9
						3, 4

III. JULY 1780. [75]

Days of the Month.	Semidiameter of the Sun.	Time of Days passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 46. 9	1. 8. 6	2. 23. 0	0,007254	1. 20. 25
7	15. 47. 0	1. 8. 3	2. 23. 0	0,007195	1. 20. 6
13	15. 47. 2	1. 8. 0	2. 23. 1	0,007057	1. 19. 47
19	15. 47. 7	1. 7. 6	2. 23. 2	0,006860	1. 19. 27
25	15. 48. 3	1. 7. 1	2. 23. 4	0,006614	1. 19. 8

Eclipses of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	0. 10. 41	4	1. 6. 13 I	5	1. 29. 27 I
2	18. 39. 1	4	3. 23. 14 E	5	3. 11. 23 E
4	13. 7. 25	7	14. 23. 50 I	12	5. 27. 44 I
6	7. 35. 59	7	16. 40. 42 E	12	7. 8. 54 E
8	2. 4. 15	11	3. 41. 33 I	19	9*26. 29 I
9	20. 32. 40	11	5. 58. 23 E	19	11. 6. 51 E
11	15. 1. 9	14	16. 59. 16 I	26	13. 25. 32 I
13	9*29. 43	14	19. 16. 1 E	26	15. 5. 12 E
15	3. 58. 10	18	6. 17. 24 I	IV. Satellite. Conj.	
16	22. 26. 43	18	8. 34. 5 E		
18	16. 55. 18	21	19. 35. 35 I	3	14. 47 Sup
20	11. 23. 55	21	21. 52. 12 E	12	0. 15 Inf..
22	5. 52. 31	25	8*53. 54 I	20	8. 52 Sup.
24	0. 21. 11	25	11. 10. 27 E	28	18. 46 Inf.
25	18. 49. 49	28	22. 12. 18 I		
27	13. 18. 30	29	0. 28. 47 E		
29	7. 47. 10				
31	2. 15. 59				

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J U L Y 1780.

IV.

Days	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Greatest Elong. 30^d.

1	4. 23. 4	6. 57 N	3. 20. 32	1. 51 N	23. 44 N	0. 46
4	5. 7. 34	6. 30	3. 26. 25	1. 52	22. 44	0. 59
7	5. 20. 44	5. 45	4. 2. 1	1. 46	21. 28	1. 10
10	6. 2. 43	4. 47	4. 7. 20	1. 36	20. 0	1. 20
13	6. 13. 43	3. 44	4. 12. 21	1. 20	18. 24	1. 28
16	6. 23. 53	2. 37	4. 17. 5	1. 1	16. 42	1. 34
19	7. 3. 26	1. 30	4. 21. 31	0. 37	14. 56	1. 39
22	7. 12. 29	0. 24 N	4. 25. 39	0. 11 N	13. 9	1. 42
25	7. 21. 10	0. 40 S	4. 29. 28	0. 19 S	11. 23	1. 45
28	7. 29. 37	1. 41	5. 2. 56	0. 50	9. 40	1. 45
31	8. 7. 54	2. 39	5. 6. 2	1. 24	8. 1	1. 44

V E N U S.

1	8. 15. 9	0. 2 S	4. 20. 37	0. 2 S	14. 36 N	2. 48
7	8. 24. 39	0. 35	4. 23. 35	1. 0	12. 44	2. 33
13	9. 4. 9	1. 8	4. 25. 32	2. 7	11. 2	2. 15
19	9. 13. 38	1. 38	4. 26. 18	3. 23	9. 35	1. 52
25	9. 23. 7	2. 6	4. 25. 41	4. 44	8. 31	1. 24

M A R S. ♂ 16^d. 20^h $\frac{1}{2}$.

1	3. 17. 57	1. 36 N	3. 14. 55	0. 59 N	23. 37 N	0. 21
7	3. 20. 43	1. 39	3. 18. 50	1. 1	23. 10	0. 13
13	3. 23. 28	1. 41	3. 22. 44	1. 2	22. 34	0. 6
19	3. 26. 12	1. 43	3. 26. 36	1. 4	21. 54	23. 57
25	3. 28. 55	1. 45	4. 0. 29	1. 5	21. 8	23. 49

J U P I T E R. □ 9^d. 15^h $\frac{1}{2}$.

1	6. 28. 25	1. 15 N	6. 17. 44	1. 18 N	5. 46 S	6. 22
7	6. 28. 52	1. 14	6. 18. 7	1. 16	5. 56	5. 59
13	6. 29. 20	1. 14	6. 18. 34	1. 15	6. 8	5. 36
19	6. 29. 47	1. 14	6. 19. 7	1. 13	6. 22	5. 14
25	7. 0. 14	1. 14	6. 19. 46	1. 12	6. 38	4. 53

S A T U R N.

1	8. 6. 29	1. 47 N	8. 2. 58	1. 56 N	18. 53 S	9. 20
7	8. 6. 40	1. 47	8. 2. 41	1. 55	18. 50	8. 54
13	8. 6. 51	1. 46	8. 2. 27	1. 54	18. 49	8. 28
19	8. 7. 2	1. 46	8. 2. 15	1. 53	18. 48	8. 4
25	8. 7. 12	1. 46	8. 2. 8	1. 51	18. 48	7. 40

V.		J U L Y 1780.				[77]
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.	
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	
1	Sa.	2. 28. 31. 29	3. 5. 43. 27	3. 3. 27 N	3. 32. 55 N	
2	Su.	3. 13. 0. 5	3. 20. 20. 36	3. 59. 15	4. 21. 49	
3	M.	3. 27. 43. 57	4. 5. 9. 9	4. 40. 9	4. 53. 51	
4	Tu.	4. 12. 35. 4	4. 20. 0. 41	5. 2. 36	5. 6. 15	
5	W.	4. 27. 24. 57	5. 4. 46. 57	5. 4. 45	4. 58. 13	
6	Th.	5. 12. 5. 58	5. 19. 21. 21	4. 46. 51	4. 30. 56	
7	F.	5. 26. 32. 38	6. 3. 39. 27	4. 10. 51	3. 47. 6	
8	Sa.	6. 10. 41. 37	6. 17. 39. 5	3. 20. 10	2. 50. 29	
9	Su.	6. 24. 31. 50	7. 1. 20. 1	2. 18. 40	1. 45. 13	
10	M.	7. 8. 3. 46	7. 14. 43. 17	1. 10. 42	0. 35. 32 N	
11	Tu.	7. 21. 18. 50	7. 27. 50. 39	0. 0. 17 N	0. 34. 36 S	
12	W.	8. 4. 18. 56	8. 10. 44. 0	1. 8. 42 S	1. 41. 35	
13	Th.	8. 17. 6. 3	8. 23. 25. 15	2. 12. 54	2. 42. 18	
14	F.	8. 29. 41. 48	9. 5. 55. 51	3. 9. 28	3. 34. 7	
15	Sa.	9. 12. 7. 33	9. 18. 17. 0	3. 56. 4	4. 15. 5	
16	Su.	9. 24. 24. 18	10. 0. 29. 36	4. 31. 2	4. 43. 44	
17	M.	10. 6. 33. 0	10. 12. 34. 36	4. 53. 10	4. 59. 16	
18	Tu.	10. 18. 34. 34	10. 24. 33. 8	5. 2. 0	5. 1. 25	
19	W.	11. 0. 30. 26	11. 6. 26. 50	4. 57. 32	4. 50. 27	
20	Th.	11. 12. 22. 32	11. 18. 18. 3	4. 40. 12	4. 26. 56	
21	F.	11. 24. 13. 42	0. 0. 9. 55	4. 10. 47	3. 51. 52	
22	Sa.	0. 6. 7. 16	0. 12. 6. 17	3. 30. 22	3. 6. 26	
23	Su.	0. 18. 7. 31	0. 24. 11. 38	2. 40. 15	2. 12. 3	
24	M.	1. 0. 19. 11	1. 6. 30. 52	1. 42. 3	1. 10. 31	
25	Tu.	1. 12. 47. 15	1. 19. 9. 0	0. 37. 44 S	0. 4. 2 S	
26	W.	1. 25. 36. 40	2. 2. 10. 47	0. 30. 14 N	1. 4. 38 N	
27	Th.	2. 8. 51. 42	2. 15. 39. 52	1. 38. 44	2. 11. 59	
28	F.	2. 22. 35. 19	2. 29. 38. 7	2. 43. 52	3. 13. 48	
29	Sa.	3. 6. 48. 4	3. 14. 4. 40	3. 41. 9	4. 5. 20	
30	Su.	3. 21. 27. 15	3. 28. 55. 2	4. 25. 46	4. 41. 50	
31	M.	4. 6. 26. 47	4. 14. 1. 21	4. 53. 11	4. 59. 28	

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JULY 1780.

VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	1	♂	88. 21	96. 24	26. 31 N	26. 54 N
2	Su.	2	0. 10	104. 34	112. 44	26. 48	26. 14
3	M.	3	1. 14	120. 50	128. 49	25. 13	23. 45
4	Tu.	4	2. 15	136. 35	144. 8	21. 53	19. 40
5	W.	5	3. 12	151. 27	158. 31	17. 9	14. 23
6	Th.	6	4. 5	165. 22	172. 1	11. 27	8. 22
7	F.	7	4. 55	178. 30	184. 52	5. 12 N	2. 1 N
8	Sa.	8	5. 43	191. 8	197. 22	1. 10 S	4. 19 S
9	Su.	9	6. 30	203. 35	209. 48	7. 22	10. 18
10	M.	10	7. 18	216. 4	222. 36	13. 6	15. 42
11	Tu.	11	8. 7	228. 53	235. 26	18. 6	20. 16
12	W.	12	8. 58	242. 6	248. 53	22. 9	23. 46
13	Th.	13	9. 51	255. 45	262. 41	25. 2	26. 0
14	F.	14	10. 44	269. 40	276. 38	26. 37	26. 54
15	Sa.	15	11. 38	283. 35	290. 27	26. 50	26. 26
16	Su.	16	12. 29	297. 12	303. 49	25. 42	24. 41
17	M.	17	13. 17	310. 16	316. 34	23. 23	21. 50
18	Tu.	18	14. 3	322. 40	328. 37	20. 3	18. 5
19	W.	19	14. 46	334. 24	340. 3	15. 56	13. 39
20	Th.	20	15. 26	345. 35	351. 0	11. 14	8. 43
21	F.	21	16. 6	356. 22	1. 42	6. 8	3. 29 S
22	Sa.	22	16. 46	7. 1	12. 21	0. 47 S	1. 56 N
23	Su.	23	17. 27	17. 44	23. 13	4. 39 N	7. 21
24	M.	24	18. 10	28. 49	34. 35	10. 0	12. 36
25	Tu.	25	18. 58	40. 32	46. 43	15. 6	17. 28
26	W.	26	19. 50	53. 9	59. 51	19. 41	21. 41
27	Th.	27	20. 47	66. 52	74. 10	23. 26	24. 53
28	F.	28	21. 47	81. 46	89. 35	25. 59	26. 42
29	Sa.	29	22. 52	97. 37	105. 46	26. 59	26. 47
30	Su.	30	23. 56	113. 58	122. 7	26. 8	25. 0
31	M.	1	♂	130. 10	138. 3	23. 25	21. 25

VII. JULY 1780. [79]

Days of the Month.	Days of the Week.	Semidr. D at Noon. M. S.	Semidr. D at Mid-night. M. S.	Hor. Par. D at Noon. M. S.	Hor. Par. D at Midnight. M. S.	Report. Lo. at Noon.	Report. Lo. at Midn.
1	Sa.	16. 14	16. 19	59. 34	59. 53	4802	4779
2	Su.	16. 23	16. 27	60. 8	60. 21	4761	4745
3	M.	16. 29	16. 30	60. 29	60. 35	4736	4729
4	Tu.	16. 31	16. 30	60. 36	60. 34	4728	4730
5	W.	16. 29	16. 26	60. 29	60. 20	4736	4747
6	Th.	16. 23	16. 20	60. 9	59. 55	4760	4777
7	F.	16. 16	16. 11	59. 40	59. 24	4795	4815
8	Sa.	16. 6	16. 1	59. 6	58. 48	4837	4859
9	Su.	15. 56	15. 51	58. 29	58. 10	4882	4906
10	M.	15. 46	15. 41	57. 51	57. 33	4930	4952
11	Tu.	15. 36	15. 31	57. 15	56. 58	4975	4996
12	W.	15. 26	15. 22	56. 41	56. 24	5018	5040
13	Th.	15. 18	15. 14	56. 9	55. 54	5059	5079
14	F.	15. 10	15. 7	55. 40	55. 27	5097	5114
15	Sa.	15. 3	15. 0	55. 14	55. 2	5130	5146
16	Su.	14. 57	14. 54	54. 51	54. 41	5161	5174
17	M.	14. 52	14. 50	54. 33	54. 26	5185	5194
18	Tu.	14. 48	14. 47	54. 20	54. 15	5202	5209
19	W.	14. 46	14. 46	54. 12	54. 11	5213	5214
20	Th.	14. 46	14. 46	54. 11	54. 13	5214	5211
21	F.	14. 48	14. 50	54. 18	54. 25	5205	5195
22	Sa.	14. 52	14. 55	54. 34	54. 45	5183	5169
23	Su.	14. 59	15. 3	54. 58	55. 15	5152	5129
24	M.	15. 8	15. 14	55. 33	55. 54	5106	5079
25	Tu.	15. 20	15. 27	56. 16	56. 41	5050	5018
26	W.	15. 34	15. 41	57. 7	57. 35	4985	4950
27	Th.	15. 49	15. 57	58. 3	58. 31	4915	4880
28	F.	16. 5	16. 12	59. 0	59. 27	4844	4811
29	Sa.	16. 19	16. 25	59. 52	60. 15	4781	4753
30	Su.	16. 31	16. 35	60. 35	60. 52	4729	4709
31	M.	16. 38	16. 41	61. 4	61. 12	4694	4685

Distances of ♄'s Center from ☉, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	Spica ♏	68. 29. 19	66. 38. 41	64. 48. 8	62. 57. 38
5		53. 46. 45	51. 57. 0	50. 7. 26	48. 18. 3
6		39. 14. 25	37. 26. 26	35. 38. 47	33. 51. 26
7		25. 0. 10			
7	Antares.	70. 37. 38	68. 50. 49	67. 4. 16	65. 17. 59
8		56. 30. 37	54. 45. 58	53. 1. 36	51. 17. 31
9		42. 41. 23	40. 59. 1	39. 16. 56	37. 35. 9
10		29. 10. 44			
10	α Aquilæ.	81. 14. 37	79. 51. 45	78. 29. 14	77. 7. 7
11		70. 23. 17	69. 4. 0	67. 45. 21	66. 27. 18
12		60. 7. 11			
12	Fomalhaut.	86. 16. 48	84. 43. 43	83. 10. 51	81. 38. 14
13		73. 58. 35	72. 27. 22	70. 56. 26	69. 25. 45
14		61. 56. 25	60. 27. 26	58. 58. 46	57. 30. 26
15		50. 14. 1	48. 47. 54	47. 22. 15	45. 57. 5
16	α Arietis.	38. 59. 23			
16		100. 47. 32	99. 18. 5	97. 48. 44	96. 19. 32
17		88. 55. 16	87. 26. 46	85. 58. 24	84. 30. 8
18		77. 10. 35	75. 43. 0	74. 15. 31	72. 48. 9
19		65. 32. 54	64. 6. 9	62. 39. 29	61. 12. 56
20	Aldebaran.	54. 1. 41			
20		83. 56. 16	82. 28. 16	81. 0. 16	79. 32. 16
21		72. 12. 1	70. 43. 53	69. 15. 41	67. 47. 26
22		60. 25. 8	58. 56. 24	57. 27. 35	55. 58. 39
23		48. 32. 14	47. 2. 33	45. 32. 42	44. 2. 44
24	The Sun.	36. 30. 46			
22		113. 57. 31	112. 35. 25	111. 13. 12	109. 50. 51
23		102. 56. 35	101. 33. 10	100. 9. 33	98. 45. 43
24		91. 43. 4	90. 17. 46	88. 52. 10	87. 26. 18
25		80. 12. 26	78. 44. 41	77. 16. 35	75. 48. 8
26		68. 20. 25	66. 49. 43	65. 18. 38	63. 47. 9
27		56. 3. 42	54. 29. 44	52. 55. 23	51. 20. 36
28		43. 20. 40	41. 43. 30	40. 5. 57	38. 28. 2

IX. JULY 1780. [81]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
3	Spica α	75. 52. 1	74. 1. 21	72. 10. 40	70. 19. 59
4		61. 7. 13	59. 16. 54	57. 26. 43	55. 36. 40
5		46. 28. 52	44. 39. 53	42. 51. 9	41. 2. 40
6		32. 4. 25	30. 17. 46	28. 31. 29	26. 45. 37
7	Antares.	63. 31. 58	61. 46. 13	60. 0. 44	58. 15. 32
8		49. 33. 43	47. 50. 12	46. 6. 59	44. 24. 2
9		35. 53. 39	34. 12. 27	32. 31. 24	30. 51. 0
10	α Aquilæ.	75. 45. 25	74. 24. 9	73. 3. 22	71. 43. 5
11		65. 9. 52	63. 53. 6	62. 37. 3	61. 21. 44
12	Fomalhaut.	80. 5. 49	78. 33. 38	77. 1. 42	75. 30. 0
13		67. 55. 18	66. 25. 9	64. 55. 17	63. 25. 42
14		56. 2. 25	54. 34. 44	53. 7. 27	51. 40. 32
15		44. 32. 24	43. 8. 17	41. 44. 42	40. 21. 44
16	α Arietis.	94. 50. 26	93. 21. 28	91. 52. 37	90. 23. 53
17		83. 2. 0	81. 33. 59	80. 6. 4	78. 38. 16
18		71. 20. 53	69. 53. 44	68. 26. 41	66. 59. 45
19		59. 46. 29	58. 20. 8	56. 53. 52	55. 27. 43
20	Aldebaran.	78. 4. 16	76. 36. 14	75. 8. 12	73. 40. 7
21		66. 19. 8	64. 50. 45	63. 22. 18	61. 53. 45
22		54. 29. 37	53. 0. 27	51. 31. 10	50. 1. 46
23		42. 32. 37	41. 2. 22	39. 31. 58	38. 1. 26
21	The Sun.	119. 24. 39	118. 3. 2	116. 41. 18	115. 19. 28
22		108. 28. 20	107. 5. 40	105. 42. 49	104. 19. 47
23		97. 21. 40	95. 57. 23	94. 32. 52	93. 8. 5
24		86. 0. 9	84. 33. 42	83. 6. 55	81. 39. 50
25		74. 19. 20	72. 50. 10	71. 20. 37	69. 50. 42
26		62. 15. 17	60. 43. 0	59. 10. 18	57. 37. 12
27		49. 45. 25	48. 9. 49	46. 33. 50	44. 57. 26

Distances of γ s Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
5	The Sun.	43. 44. 33	45. 27. 13	47. 9. 45	48. 52. 9
6		57. 21. 51	59. 3. 14	60. 44. 24	62. 25. 22
7		70. 46. 47	72. 26. 20	74. 5. 38	75. 44. 41
8		83. 55. 58	85. 33. 25	87. 10. 37	88. 47. 32
9		96. 48. 0	98. 23. 17	99. 58. 19	101. 33. 4
10		109. 22. 49	110. 55. 58	112. 28. 52	114. 1. 30
9	Regulus.	57. 46. 0	59. 28. 16	61. 10. 10	62. 52. 2
10		71. 17. 6	72. 57. 22	74. 37. 23	76. 17. 10
11	Spica π	30. 35. 54	32. 13. 23	33. 50. 45	35. 27. 59
12		43. 31. 46	45. 8. 1	46. 44. 5	48. 20. 0
13		56. 16. 54	57. 51. 45	59. 26. 25	61. 0. 55
14		68. 50. 48			
14	Antares.	22. 59. 5	24. 32. 1	26. 4. 52	27. 37. 37
15		35. 19. 50	36. 51. 54	38. 23. 51	39. 55. 40
16		47. 32. 48	49. 3. 50	50. 34. 45	52. 5. 32
17		59. 37. 40	61. 7. 44	62. 37. 42	64. 7. 33
18		71. 35. 17	73. 4. 33	74. 33. 45	76. 2. 52
19		83. 27. 19	84. 56. 2	86. 24. 43	87. 53. 22
20		95. 16. 4	96. 44. 35	98. 13. 6	99. 41. 38
21		107. 4. 39			
21	α Aquilæ.	62. 51. 10	64. 0. 33	65. 10. 22	66. 20. 39
22		72. 18. 20	73. 31. 0	74. 44. 0	75. 57. 20
23		82. 8. 32			
23	Fomal- haut.	49. 36. 7	51. 0. 56	52. 26. 8	53. 51. 46
24		61. 6. 2	62. 34. 7	64. 2. 35	65. 31. 27
25		73. 1. 30	74. 32. 41	76. 4. 17	77. 36. 16
26		85. 22. 12			
26	α Arietis.	22. 56. 42	24. 22. 52	25. 50. 25	27. 19. 28
27		35. 3. 29	36. 39. 20	38. 16. 0	39. 53. 30
28		48. 11. 48	49. 53. 24	51. 35. 36	53. 18. 22
29		62. 0. 21	63. 46. 15	65. 32. 33	67. 19. 18

XI.

JULY 1780.

[83]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
4	The Sun.		38. 36. 0	40. 18. 56	42. 1. 47
5		50. 34. 26	52. 16. 33	53. 58. 29	55. 40. 15
6		64. 6. 7	65. 46. 38	67. 26. 55	69. 6. 58
7		77. 23. 29	79. 2. 0	80. 40. 15	82. 18. 15
8		90. 24. 11	92. 0. 32	93. 36. 38	95. 12. 27
9	Regulus.	103. 7. 34	104. 41. 47	106. 15. 43	107. 49. 24
10		115. 33. 53	117. 6. 0	118. 37. 53	120. 9. 31
8		50. 54. 30	52. 37. 44	54. 20. 44	56. 3. 29
9		64. 33. 33	66. 14. 49	67. 55. 49	69. 36. 35
10		77. 56. 42			
10	Spica α	24. 5. 3	25. 42. 52	27. 20. 36	28. 58. 18
11		37. 5. 5	38. 42. 0	40. 18. 45	41. 55. 20
12		49. 55. 44	51. 31. 17	53. 6. 40	54. 41. 52
13		62. 35. 14	64. 9. 23	65. 43. 21	67. 17. 10
14	Antares.	29. 10. 17	30. 42. 51	32. 15. 17	33. 47. 37
15		41. 27. 22	42. 58. 55	44. 30. 20	46. 1. 38
16		53. 36. 12	55. 6. 44	56. 37. 12	58. 7. 28
17		65. 37. 18	67. 6. 56	68. 36. 28	70. 5. 55
18		77. 31. 54	79. 0. 50	80. 29. 44	81. 58. 33
19		89. 21. 58	90. 50. 31	92. 19. 3	93. 47. 34
20		101. 10. 11	102. 38. 45	104. 7. 21	105. 35. 59
21	α Aquilæ	67. 31. 23	68. 42. 32	69. 54. 5	71. 6. 1
22		77. 11. 0	78. 24. 59	79. 39. 13	80. 53. 44
23	Fomal- haut.	55. 17. 47	56. 44. 15	58. 11. 6	59. 38. 22
24		67. 0. 42	68. 30. 19	70. 0. 19	71. 30. 43
25		79. 8. 40	80. 41. 27	82. 14. 38	83. 48. 13
26	α Arietis.	23. 49. 55	30. 21. 40	31. 54. 31	33. 28. 27
27		41. 31. 49	43. 10. 48	44. 50. 27	46. 30. 47
28		55. 1. 44	56. 45. 38	58. 30. 2	60. 14. 56
29		69. 6. 30			

Configurations of the SATELLITES of J U P I T E R
at Half an Hour past 9 o' Clock in the Evening.

1	3.0	.2	.1	⊙		4.
2				⊙	.2 1.	4. 3.
3			.1	⊙	4.	2. 3.
4		4.2.		⊙	1.	3.
5		4.	3. .2	⊙	.1	
6	4.	3.	1.	⊙		.2
7	4.	.3		⊙	2.	.1
8	4.	2.	1.	⊙		3.0
9	4.			⊙	.2 1.	.3
10		4.	.1	⊙		2. 3.
11		4. 2.		⊙	1.	3.
12	1.0	.2 3.		⊙	.4	
13		3.	1.	⊙	.2	.4
14		.3		⊙	2. .1	.4
15		2.	1. .3	⊙		.4
16	2.0			⊙	1.	.3 4.

Configurations at 9 o' th' Clock in the Evening.

17		.1		⊙	2.	.3 4.
18			2.	⊙	1.	3. 4.
19		.2	.1 3.	⊙		4.
20	1.0 4.0	3.		⊙	.2	
21		.3	4.	⊙	.1 2.	
22		4.	2. .3 1.	⊙		
23	4.		.2	⊙	.1 .3	
24	4.		.1	⊙	.2	.3
25	4.			⊙	1.	2. 2.0
26	4.	.2	.1	⊙		3.0
27		.4 3.		⊙	1.	.2
28	1.0	.3	.4	⊙	2.	
29		.3	2. 1.	⊙	.4	
30			.2	⊙	1.0 3	.4
31		1.		⊙	.2	.3 .4

I. AUGUST 1780. [85]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D.H.M.	
			First Quarter	6. 18. 39
			Full Moon	14. 14. 44
			Last Quarter	22. 17. 7
			New Moon	29. 11. 7
1	Tu.	Lammas Day.	D. Other Phenomena.	
2	W.			
3	Th.			
4	F.			
5	Sa.			
		[our Lord.	4. ☾ 1 ^h . 0'.	
6	Su.	11th Su. aft. Tr. Transf. of	☾ 14 ^h . 28'.	
7	M.	Name of Jesus.	5. ☿ Stationary.	
8	Tu.		☾ 0 ^h . 34'.	
9	W.		☾ 22 ^h . 33'.	
10	Th.	St. Lawrence.	6. ☾ 12 ^h . 55'.	
11	F.	Pr. of Brunswick born.	7. ☾ 11 ^h . 46'.	
12	Sa.	Pr. of Wales born, 1762.	☾ 16 ^h . 46'.	
			☾ 20 ^h . 37'.	
13	Su.	12th Sunday after Trinity.	9. ☿ Ophiuchi 7 ^h . 54'.	
14	M.		10. ☿ 20 ^h . 6'.	
15	Tu.		11. ☿ 0 ^h . 24'.	
16	W.	Pr. Frederick born.	☿ 5 ^h . 12'.	
17	Th.		14. ☿ 3 ^h . 26'.	
18	F.		☿ Stationary.	
19	Sa.		16. ☾ 1 ad ↓ 8 ^h . 4'.	
			☾ 2 ad ↓ 8 ^h . 58'.	
			☾ 3 ad ↓ 9 ^h . 5'.	
20	Su.	13th Sunday after Trinity.	22. ☉ enters ☿ at 3 ^h . 8'.	
21	M.	Pr. William Henry born.	24. ☾ 125 ☿ 8 ^h . 47'.	
22	Tu.		26. ☾ 1 ^h . 10'.	
23	W.		☾ 2 and ↓ ☿ 18 ^h . 9'.	
24	Th.	St. Bartholomew.	31. ☾ 10 ^h . 32'.	
25	F.		☾ 23 ^h . 34'.	
26	Sa.			
27	Su.	14th Sunday after Trinity.		
28	M.	St. Augustine.		
29	Tu.	Beheading St. John Bapt.		
30	W.			
31	Th.			

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equal. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Tu.	4. 9. 41. 40	8. 48. 34, 2	17. 50. 43	5. 49, 9	
2	W.	4. 10. 39. 9	8. 52. 26, 6	17. 35. 13	5. 45, 9	4, 0
3	Th.	4. 11. 36. 40	8. 56. 18, 5	17. 19. 25	5. 41, 2	4, 7
4	F.	4. 12. 34. 11	9. 0. 9, 8	17. 3. 21	5. 35, 9	5, 3
5	Sa.	4. 13. 31. 44	9. 4. 0, 4	16. 47. 6	5. 30, 0	5, 9
						6, 5
6	Su.	4. 14. 29. 16	9. 7. 50, 4	16. 30. 23	5. 23, 5	
7	M.	4. 15. 26. 50	9. 11. 39, 8	16. 13. 30	5. 16, 4	7, 1
8	Tu.	4. 16. 24. 24	9. 15. 28, 6	15. 56. 21	5. 8, 7	7, 7
9	W.	4. 17. 22. 0	9. 19. 16, 9	15. 38. 57	5. 0, 3	8, 4
10	Th.	4. 18. 19. 36	9. 23. 4, 5	15. 21. 17	4. 51, 4	8, 9
						9, 5
11	F.	4. 19. 17. 13	9. 26. 51, 5	15. 3. 24	4. 41, 9	10, 1
12	Sa.	4. 20. 14. 51	9. 30. 37, 9	14. 45. 16	4. 31, 8	10, 6
13	Su.	4. 21. 12. 30	9. 34. 23, 8	14. 26. 54	4. 21, 2	11, 2
14	M.	4. 22. 10. 10	9. 38. 9, 1	14. 8. 18	4. 10, 0	11, 7
15	Tu.	4. 23. 7. 52	9. 41. 54, 0	13. 49. 29	3. 58, 3	12, 3
						12, 7
16	W.	4. 24. 5. 35	9. 45. 38, 2	13. 30. 26	3. 46, 0	13, 2
17	Th.	4. 25. 3. 19	9. 49. 22, 0	13. 11. 11	3. 33, 3	13, 7
18	F.	4. 26. 1. 5	9. 53. 5, 3	12. 51. 43	3. 20, 1	14, 2
19	Sa.	4. 26. 58. 53	9. 56. 48, 1	12. 32. 3	3. 6, 4	14, 6
20	Su.	4. 27. 56. 42	10. 0. 30, 5	12. 12. 10	2. 52, 2	15, 0
						15, 5
21	M.	4. 28. 54. 34	10. 4. 12, 4	11. 52. 5	2. 37, 6	15, 8
22	Tu.	4. 29. 52. 26	10. 7. 53, 9	11. 31. 50	2. 22, 6	16, 2
23	W.	5. 0. 50. 21	10. 11. 34, 9	11. 11. 23	2. 7, 1	16, 6
24	Th.	5. 1. 48. 18	10. 15. 15, 6	10. 50. 45	1. 51, 3	17, 0
25	F.	5. 2. 46. 17	10. 18. 55, 9	10. 29. 57	1. 35, 1	17, 3
						17, 7
26	Sa.	5. 3. 44. 17	10. 22. 35, 9	10. 8. 59	1. 18, 5	18, 0
27	Su.	5. 4. 42. 20	10. 26. 15, 4	9. 47. 51	1. 1, 5	18, 3
28	M.	5. 5. 40. 24	10. 29. 54, 5	9. 26. 33	0. 44, 2	18, 6
29	Tu.	5. 6. 38. 30	10. 33. 33, 4	9. 5. 7	0. 26, 5	18, 9
30	W.	5. 7. 36. 38	10. 37. 11, 9	8. 43. 31	0. 8, 5	18, 3
31	Th.	5. 8. 34. 47	10. 40. 50, 1	8. 21. 48	Sub. 9, 8	

III. AUGUST 1780. [87]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 49, 1	1. 6, 5	2. 23, 6	0. 006232	1. 18. 46
7	15. 50, 0	1. 5, 9	2. 23, 9	0. 005810	1. 18. 27
13	15. 51, 0	1. 5, 5	2. 24, 3	0. 005324	1. 18. 8
19	15. 52, 2	1. 5, 0	2. 24, 6	0. 004806	1. 17. 49
25	15. 53, 4	1. 4, 7	2. 25, 0	0. 004249	1. 17. 30

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite Emerfions.		II. Satellite.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	20. 44. 41	1	11. 30. 59 I	2	17. 25. 0 I
3	15. 13. 30	1	13. 47. 25 E	2	19. 4. 8 E
5	9. 42. 21	5	0. 49. 43 I	9	21. 25. 0 I
7	4. 11. 14	5	3. 6. 3 E	9	23. 3. 22 E
8	22. 40. 4	8	14. 8. 40 I	17	1. 25. 27 I
10	17. 9. 2	8	16. 24. 56 E	17	3. 3. 8 E
12	11. 37. 59	12	3. 27. 43 I	24	5. 26. 14 I
14	6. 6. 54	12	5. 43. 55 E	24	7. 3. 16 E
16	0. 35. 56	15	16. 46. 54 I	31	9. 27. 16 I
17	19. 4. 57	15	19. 3. 2 E	31	11. 3. 42 E
19	13. 33. 57	19	6. 6. 9 I	IV. Satellite. Conj.	
21	8. 3. 0	19	8. 22. 15 E		
23	2. 32. 4	22	21. 41. 42 E		
24	21. 1. 7	26	11. 1. 12 E		
26	15. 30. 16	30	0. 20. 44 E		
28	9. 59. 21				
30	4. 28. 29			6	3. 41 Sup.
31	22. 57. 38			14	13. 56 Inf.
				22	23. 10 Sup.
				31	9. 41 Inf.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Inf. δ 27^d. 20^h $\frac{1}{2}$.

1	8. 10. 39	2. 58 S	5. 6. 58	1. 34 S	7. 31 N	1. 44
4	8. 18. 53	3. 50	5. 9. 29	2. 10	6. 1	1. 41
7	8. 27. 11	4. 39	5. 11. 28	2. 44	4. 45	1. 36
10	9. 5. 40	5. 22	5. 12. 52	3. 18	3. 42	1. 28
13	9. 14. 23	5. 59	5. 13. 33	3. 48	2. 58	1. 19
16	9. 23. 29	6. 29	5. 13. 26	4. 14	2. 37	1. 7
19	10. 3. 4	6. 50	5. 12. 28	4. 31	2. 43	0. 51
22	10. 13. 16	7. 0	5. 10. 40	4. 36	3. 19	0. 34
25	10. 24. 14	6. 55	5. 8. 12	4. 25	4. 24	0. 14
28	11. 6. 8	6. 34	5. 5. 24	4. 0	5. 49	23. 46
31	11. 19. 7	5. 51	5. 2. 46	3. 15	7. 28	23. 27

VENUS. Inf. δ 9^d. 20^h $\frac{1}{2}$.

1	10. 4. 11	2. 35 S	4. 23. 15	6. 16 S	7. 53 N	0. 45
7	10. 13. 40	2. 54	4. 19. 58	7. 20	7. 53	0. 9
13	10. 23. 9	3. 9	4. 16. 15	7. 58	8. 23	23. 25
19	11. 2. 39	3. 19	4. 12. 58	8. 4	9. 11	22. 51
25	11. 12. 10	3. 23	4. 10. 45	7. 44	10. 6	22. 21

MARS.

1	4. 2. 4	1. 47 N	4. 4. 59	1. 6 N	20. 7 N	23. 41
7	4. 4. 45	1. 48	4. 8. 49	1. 7	19. 10	23. 33
13	4. 7. 26	1. 49	4. 12. 40	1. 8	18. 7	23. 26
19	4. 10. 6	1. 50	4. 16. 29	1. 9	17. 1	23. 19
25	4. 12. 45	1. 51	4. 20. 19	1. 10	15. 50	23. 12

JUPITER.

1	7. 0. 46	1. 13 N	6. 20. 37	1. 10 N	6. 59 S	4. 29
7	7. 1. 14	1. 13	6. 21. 25	1. 9	7. 18	4. 9
13	7. 1. 41	1. 13	6. 22. 18	1. 8	7. 39	3. 49
19	7. 2. 8	1. 13	6. 23. 15	1. 7	8. 1	3. 30
25	7. 2. 36	1. 12	6. 24. 14	1. 6	8. 24	3. 12

SATURN. $\square$ 24^d. 13^h $\frac{3}{4}$.

1	8. 7. 25	1. 45 N	8. 2. 3	1. 50 N	18. 48 S	7. 12
7	8. 7. 36	1. 45	8. 2. 2	1. 48	18. 50	6. 48
13	8. 7. 47	1. 44	8. 2. 5	1. 47	18. 52	6. 26
19	8. 7. 58	1. 44	8. 2. 12	1. 46	18. 54	6. 4
25	8. 8. 9	1. 44	8. 2. 22	1. 44	18. 57	5. 43

V. AUGUST 1780. [89]

Days of the Month.	Days of the Week.	Moon's Longitude at Noen.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Tu.	4. 21. 37. 18	4. 29. 13. 18	5. 0. 30 N	4. 56. 12 N
2	W.	5. 6. 47. 57	5. 14. 20. 0	4. 46. 43	4. 32. 15
3	Th.	5. 21. 48. 20	5. 29. 12. 1	4. 13. 15	3. 50. 8
4	F.	6. 6. 30. 21	6. 13. 42. 51	3. 23. 29	2. 53. 54
5	Sa.	6. 20. 49. 10	6. 27. 49. 13	2. 21. 59	1. 48. 21
6	Su.	7. 4. 43. 3	7. 11. 30. 50	1. 13. 36	0. 38. 17 N
7	M.	7. 18. 12. 50	7. 24. 49. 25	0. 2. 56 N	0. 31. 58 S
8	Tu.	8. 1. 20. 54	8. 7. 47. 46	1. 6. 0 S	1. 38. 46
9	W.	8. 14. 10. 25	8. 20. 29. 18	2. 9. 54	2. 39. 6
10	Th.	8. 26. 44. 46	9. 2. 57. 16	3. 6. 3	3. 30. 33
11	F.	9. 9. 7. 5	9. 15. 14. 36	3. 52. 23	4. 11. 22
12	Sa.	9. 21. 20. 1	9. 27. 23. 39	4. 27. 20	4. 40. 11
13	Su.	10. 3. 25. 41	10. 9. 26. 20	4. 49. 47	4. 56. 9
14	M.	10. 15. 25. 42	10. 21. 24. 4	4. 59. 11	4. 58. 56
15	Tu.	10. 27. 21. 26	11. 3. 18. 6	4. 55. 24	4. 48. 38
16	W.	11. 9. 14. 8	11. 15. 9. 48	4. 38. 44	4. 25. 49
17	Th.	11. 21. 5. 16	11. 27. 0. 53	4. 10. 0	3. 51. 27
18	F.	0. 2. 56. 51	0. 8. 53. 31	3. 30. 20	3. 6. 51
19	Sa.	0. 14. 51. 26	0. 20. 50. 55	2. 41. 13	2. 13. 38
20	Su.	0. 26. 52. 23	1. 2. 56. 28	1. 44. 22	1. 13. 41
21	M.	1. 9. 3. 42	1. 15. 14. 37	0. 41. 52 S	0. 9. 12 S
22	Tu.	1. 21. 29. 52	1. 27. 50. 1	0. 23. 57 N	0. 57. 17 N
23	W.	2. 4. 15. 39	2. 10. 47. 19	1. 30. 20	2. 2. 45
24	Th.	2. 17. 25. 31	2. 24. 10. 42	2. 34. 1	3. 3. 41
25	F.	3. 1. 3. 4	3. 8. 2. 53	3. 31. 12	3. 56. 4
26	Sa.	3. 15. 10. 3	3. 22. 24. 25	4. 17. 41	4. 35. 35
27	Su.	3. 29. 45. 26	4. 7. 12. 31	4. 49. 12	4. 58. 7
28	M.	4. 14. 44. 39	4. 22. 20. 44	5. 2. 2	5. 0. 39
29	Tu.	4. 29. 59. 24	5. 7. 39. 17	4. 53. 49	4. 41. 45
30	W.	5. 15. 18. 49	5. 22. 56. 34	4. 24. 36	4. 2. 46
31	Th.	6. 0. 31. 11	6. 8. 1. 30	3. 36. 47	3. 7. 13

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Ascen. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	2	0. 56	145. 42	153. 9	19. 3 N	16. 23 N
2	W.	3	1. 53	160. 21	167. 21	13. 28	10. 21
3	Th.	4	2. 46	174. 9	180. 47	7. 8	3. 50 N
4	F.	5	3. 36	187. 19	193. 45	0. 32 N	2. 45 S
5	Sa.	6	4. 25	200. 7	206. 29	5. 57 S	9. 1
6	Su.	7	5. 14	212. 52	219. 17	11. 57	14. 42
7	M.	8	6. 4	225. 46	232. 20	17. 14	19. 31
8	Tu.	9	6. 55	238. 59	245. 43	21. 32	23. 16
9	W.	10	7. 47	252. 32	259. 26	24. 41	25. 46
10	Th.	11	8. 41	266. 22	273. 18	26. 32	26. 57
11	F.	12	9. 34	280. 13	287. 5	27. 1	26. 45
12	Sa.	13	10. 26	293. 50	300. 29	26. 11	25. 17
13	Su.	14	11. 15	306. 58	313. 18	24. 6	22. 40
14	M.	15	12. 2	319. 28	325. 29	20. 59	19. 6
15	Tu.	16	12. 45	331. 20	337. 2	17. 1	14. 47
16	W.	17	13. 27	342. 37	348. 5	12. 25	9. 56
17	Th.	18	14. 7	353. 28	358. 48	7. 22	4. 44 S
18	F.	19	14. 47	4. 6	9. 24	2. 3 S	0. 40 N
19	Sa.	20	15. 28	14. 43	20. 6	3. 23 N	6. 5
20	Su.	21	16. 10	25. 34	31. 9	8. 45	11. 21
21	M.	22	16. 55	36. 54	42. 49	13. 52	16. 17
22	Tu.	23	17. 43	48. 57	55. 20	18. 33	20. 38
23	W.	24	18. 37	61. 58	68. 53	22. 30	24. 7
24	Th.	25	19. 35	76. 4	83. 30	25. 26	26. 24
25	F.	26	20. 36	91. 11	99. 2	26. 59	27. 9
26	Sa.	27	21. 40	107. 0	115. 2	26. 52	26. 8
27	Su.	28	22. 42	123. 3	131. 0	24. 56	23. 17
28	M.	29	23. 41	138. 48	146. 26	21. 14	18. 49
29	Tu.	1	0	153. 53	161. 8	16. 4	13. 4
30	W.	2	0. 37	168. 13	175. 8	9. 51	6. 31 N
31	Th.	3	1. 30	181. 55	188. 36	3. 6	0. 19 S

VII. AUGUST 1780. [91]

Days of the Month.	Days of the Week.	Semidr. D at Noon.	Semidr. D at Mid-night.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Tu.	16. 41	16. 41	61. 15	61. 14	4682	4683
2	W.	16. 39	16. 37	61. 8	60. 59	4690	4700
3	Th.	16. 33	16. 29	60. 45	60. 28	4717	4737
4	F.	16. 23	16. 17	60. 8	59. 47	4761	4787
5	Sa.	16. 11	16. 4	59. 23	58. 58	4816	4846
6	Su.	15. 57	15. 51	58. 34	58. 10	4876	4906
7	M.	15. 44	15. 38	57. 45	57. 22	4937	4966
8	Tu.	15. 32	15. 26	56. 59	56. 38	4995	5022
9	W.	15. 21	15. 16	56. 18	56. 0	5048	5071
10	Th.	15. 11	15. 6	55. 42	55. 26	5094	5115
11	F.	15. 2	14. 59	55. 12	55. 0	5133	5149
12	Sa.	14. 56	14. 53	54. 48	54. 38	5165	5178
13	Su.	14. 51	14. 49	54. 29	54. 22	5190	5199
14	M.	14. 47	14. 46	54. 16	54. 12	5207	5213
15	Tu.	14. 45	14. 44	54. 8	54. 5	5218	5222
16	W.	14. 44	14. 44	54. 5	54. 6	5222	5221
17	Th.	14. 45	14. 46	54. 8	54. 12	5218	5213
18	F.	14. 47	14. 50	54. 17	54. 25	5206	5195
19	Sa.	14. 52	14. 55	54. 33	54. 44	5185	5170
20	Su.	14. 58	15. 3	54. 57	55. 13	5133	5132
21	M.	15. 7	15. 13	55. 30	55. 50	5110	5084
22	Tu.	15. 19	15. 25	56. 11	56. 35	5056	5026
23	W.	15. 32	15. 39	56. 59	57. 26	4995	4961
24	Th.	15. 47	15. 54	57. 54	58. 22	4926	4891
25	F.	16. 2	16. 10	58. 50	59. 18	4856	4822
26	Sa.	16. 17	16. 24	59. 45	60. 10	4789	4759
27	Su.	16. 30	16. 35	60. 33	60. 53	4732	4708
28	M.	16. 40	16. 43	61. 10	61. 22	4687	4673
29	Tu.	16. 45	16. 46	61. 30	61. 33	4664	4660
30	W.	16. 45	16. 44	61. 30	61. 23	4664	4672
31	Th.	16. 40	16. 36	61. 10	60. 55	4687	4705

Distances of D's Center from ☉, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
2	Spica ♄	44. 27. 46	42. 35. 30	40. 43. 28	38. 51. 41
3		29. 37. 9	27. 47. 23	25. 58. 4	24. 9. 15
4	Antares.	60. 39. 43	58. 51. 10	57. 2. 59	55. 15. 10
5		46. 21. 37	44. 36. 4	42. 50. 54	41. 6. 8
6		32. 28. 15	30. 45. 54	29. 3. 58	27. 22. 27
7	α Aquilæ.	73. 1. 21	71. 40. 22	70. 20. 1	69. 0. 18
8		62. 32. 5	61. 16. 45	60. 2. 15	58. 48. 36
9	Fomalhaut.	76. 43. 18	75. 12. 2	73. 41. 4	72. 10. 24
10		64. 41. 34	63. 12. 44	61. 44. 12	60. 16. 0
11	α Pegasi.	73. 47. 54	72. 24. 21	71. 1. 6	69. 38. 8
12		62. 48. 4	61. 27. 6	60. 6. 30	58. 46. 18
13	α Arietis.	91. 58. 43	90. 30. 24	89. 2. 11	87. 34. 4
14		80. 14. 47	78. 47. 10	77. 19. 37	75. 52. 10
15		68. 36. 6	67. 9. 7	65. 42. 12	64. 15. 23
16		57. 2. 29	55. 36. 10	54. 9. 56	52. 43. 48
17	Aldebaran.	75. 19. 39	73. 51. 37	72. 23. 35	70. 55. 31
18		63. 34. 52	62. 6. 39	60. 38. 22	59. 10. 3
19		51. 47. 31	50. 18. 48	48. 50. 2	47. 21. 11
20		39. 56. 0	38. 26. 44	36. 57. 27	35. 28. 7
21		28. 1. 16			
21	Pollux.	71. 20. 41	69. 48. 4	68. 15. 11	66. 42. 3
22		58. 52. 16	57. 17. 27	55. 42. 19	54. 6. 52
23		46. 4. 37			
20	The Sun.	121. 3. 22	119. 40. 1	118. 16. 29	116. 52. 44
21		109. 50. 47	108. 25. 42	107. 0. 21	105. 34. 4
22		98. 22. 34	96. 55. 14	95. 27. 35	93. 59. 38
23		86. 34. 46	85. 4. 44	83. 34. 19	82. 3. 32
24		74. 23. 45	72. 50. 34	71. 16. 58	69. 42. 58
25		61. 46. 42	60. 10. 9	58. 33. 12	56. 55. 49
26		48. 42. 45	47. 2. 55	45. 22. 43	43. 42. 9
31	Antares.	66. 37. 10	64. 44. 17	62. 51. 40	60. 59. 21
3. 1		51. 42. 36			

IX. AUGUST 1780. [93]

Distances of D's Center from ☉, and from Stars east of her.

Days.	Stars Names.	12 Hours. D. M. S.	15 Hours. D. M. S.	18 Hours. D. M. S.	21 Hours. D. M. S.
1	Spica 吸	51. 58. 28	50. 5. 35	48. 12. 50	46. 20. 13
2		37. 0. 8	35. 8. 51	33. 17. 55	31. 27. 22
3		22. 20. 57			
3	Antares.	67. 57. 15	66. 7. 22	64. 17. 49	62. 28. 36
4		53. 27. 42	51. 40. 37	49. 53. 54	48. 7. 34
5		39. 21. 45	37. 37. 46	35. 54. 11	34. 11. 1
6		25. 41. 21			
6	α Aquilæ.	78. 30. 46	77. 7. 39	75. 45. 0	74. 22. 54
7		67. 41. 13	66. 22. 48	65. 5. 9	63. 48. 14
8		57. 35. 51			
8	Fomal- haut.	82. 51. 16	81. 18. 51	79. 46. 42	78. 14. 52
9		70. 40. 1	69. 9. 56	67. 40. 10	66. 10. 43
10		58. 48. 7			
10	α Pegasi.	79. 24. 41	78. c. 7	76. 35. 47	75. 11. 43
11		68. 15. 28	66. 53. 7	65. 31. 5	64. 9. 25
12		57. 26. 29			
12	α Arietis.	97. 52. 50	96. 24. 10	94. 55. 35	93. 27. 7
13		86. 6. 2	84. 38. 6	83. 10. 14	81. 42. 28
14		74. 24. 47	72. 57. 30	71. 30. 17	70. 3. 9
15		62. 48. 38	61. 21. 58	59. 55. 23	58. 28. 54
16	Aldeba- ran.	51. 17. 46			
16		81. 11. 36	79. 43. 38	78. 15. 39	76. 47. 39
17		69. 27. 27	67. 59. 21	66. 31. 13	65. 3. 4
18		57. 41. 41	56. 13. 14	54. 44. 43	53. 16. 9
19		45. 52. 17	44. 23. 18	42. 54. 16	41. 25. 10
20	Pollux.	33. 58. 45	32. 29. 22	30. 59. 59	29. 30. 37
21		65. 8. 39	63. 34. 59	62. 1. 1	60. 26. 47
22		52. 31. 6	50. 55. 0	49. 18. 33	47. 41. 46
20	The Sun.	115. 28. 48	114. 4. 39	112. 40. 15	111. 15. 38
21		104. 8. 53	102. 42. 44	101. 16. 18	99. 49. 34
22		92. 31. 21	91. 2. 44	89. 33. 46	88. 4. 26
23		80. 32. 22	79. 0. 49	77. 28. 51	75. 56. 30
24		68. 8. 33	66. 33. 43	64. 58. 28	63. 22. 48
25		55. 18. 2	53. 39. 49	52. 1. 11	50. 22. 10
26		42. 1. 13	40. 19. 56	38. 38. 21	
30	Antares.	74. 10. 55	72. 17. 11	70. 23. 38	68. 30. 17
31		59. 7. 19	57. 15. 37	55. 24. 14	53. 33. 14

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
3	The Sun.	40. 22. 41	42. 5. 49	43. 48. 42	45. 31. 20
4		54. 0. 32	55. 41. 29	57. 22. 7	59. 2. 24
5		67. 18. 40	68. 56. 50	70. 34. 39	72. 12. 6
6		80. 13. 55	81. 49. 10	83. 24. 4	84. 58. 37
7		92. 46. 0	94. 18. 27	95. 50. 33	97. 22. 20
8		104. 56. 20	106. 26. 11	107. 55. 46	109. 25. 2
9	Spica μ	116. 47. 10	118. 14. 47	119. 42. 9	121. 9. 17
7		27. 30. 42	29. 9. 27	30. 47. 57	32. 26. 14
8		40. 34. 0	42. 10. 49	43. 47. 22	45. 23. 41
9		53. 21. 32	54. 56. 23	56. 31. 1	58. 5. 25
10	Antares.	65. 54. 11			
10		20. 3. 11	21. 35. 41	23. 8. 5	24. 40. 23
11		32. 20. 9	33. 51. 44	35. 23. 12	36. 54. 33
12		44. 29. 23	46. 0. 0	47. 30. 30	49. 0. 54
13		56. 31. 23	58. 1. 12	59. 30. 55	61. 0. 34
14		68. 27. 37	69. 56. 49	71. 25. 58	72. 55. 4
15		80. 19. 40	81. 48. 28	83. 17. 13	84. 45. 57
16		92. 9. 10	93. 37. 45	95. 6. 20	96. 34. 55
17	α Aquilæ.	103. 57. 51			
17		60. 19. 59	61. 28. 11	62. 36. 50	63. 45. 58
18		69. 38. 20	70. 49. 57	72. 1. 52	73. 14. 8
19	Fomal- haut.	79. 19. 52			
19		46. 39. 56	48. 3. 6	49. 26. 39	50. 30. 34
20		57. 55. 36	59. 21. 38	60. 47. 59	62. 14. 40
21		69. 32. 45	71. 1. 18	72. 30. 9	73. 59. 19
22	α Arietis.	81. 29. 54	83. 0. 59	84. 32. 23	86. 4. 8
23		30. 40. 26	32. 11. 16	33. 43. 0	35. 15. 37
24		43. 10. 8	44. 47. 4	46. 24. 36	48. 2. 45
25		56. 22. 9	58. 3. 41	59. 45. 45	61. 28. 20
26	Aldeba- ran.	70. 8. 44			
26		39. 37. 22	41. 23. 6	43. 9. 22	44. 56. 9
27		53. 57. 20	55. 46. 54	57. 36. 52	59. 27. 12
28		68. 44. 1			

XI. AUGUST 1780. [95]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
3	The Sun.	47. 13. 44	48. 55. 52	50. 37. 42	52. 19. 16
4		60. 42. 23	62. 21. 59	64. 1. 14	65. 40. 7
5		73. 49. 12	75. 25. 55	77. 2. 17	78. 38. 17
6		86. 32. 48	88. 6. 37	89. 40. 5	91. 13. 13
7		98. 53. 47	100. 24. 54	101. 55. 41	103. 26. 10
8		110. 54. 1	112. 22. 42	113. 51. 8	115. 19. 17
7	Spica α	34. 4. 16	35. 42. 4	37. 19. 38	38. 56. 56
8		46. 59. 46	48. 35. 34	50. 11. 7	51. 46. 26
9		59. 39. 37	61. 13. 34	62. 47. 19	64. 20. 52
10	Antares.	26. 12. 34	27. 44. 38	29. 16. 35	30. 48. 26
11		38. 25. 46	39. 56. 51	41. 27. 49	42. 58. 39
12		50. 31. 12	52. 1. 24	53. 31. 29	55. 1. 29
13		62. 30. 8	63. 59. 36	65. 29. 1	66. 58. 21
14		74. 24. 6	75. 53. 3	77. 21. 58	78. 50. 50
15		86. 14. 39	87. 43. 18	89. 11. 57	90. 40. 34
16		98. 3. 30	99. 32. 4	101. 0. 39	102. 29. 15
17	α Aquilæ.	64. 55. 37	66. 5. 42	67. 16. 10	68. 27. 3
18		74. 26. 42	75. 39. 35	76. 52. 44	78. 6. 9
19	Fomal- haut.	52. 14. 52	53. 39. 31	55. 4. 32	56. 29. 53
20		63. 41. 40	65. 8. 58	66. 36. 35	68. 4. 31
21		75. 28. 48	76. 58. 36	78. 28. 43	79. 59. 9
22		87. 36. 11			
22	α Arietis.	24. 48. 0	26. 14. 27	27. 41. 57	29. 10. 38
23		36. 49. 8	38. 23. 19	39. 58. 13	41. 33. 49
24		49. 41. 31	51. 20. 50	53. 0. 43	54. 41. 9
25		63. 11. 26	64. 55. 2	66. 39. 7	68. 23. 41
26	Aldeba- ran.	46. 43. 27	48. 31. 15	50. 19. 29	52. 8. 11
27		61. 17. 56	63. 9. 0	65. 0. 22	66. 52. 2

[96]

AUGUST 1780.

XII.

Configurations of the SATELLITES of JUPITER at 8 o'Clock in the Evening.

1				⊙	2.	1.	3.	4.
2		2.	1.	⊙	3.			4.
3			3.	⊙	2.	1.		4.
4		3.		1.	⊙		2.	4.
5	1.●		3.	2.	⊙		4.	
6			2.	4.	⊙	1. 6 3		
7		4.		1.	⊙		2.	3.
8		4.			⊙	2.	1.	3.
9	4.		2.	1.	⊙		3.	
10	4.		3.		⊙		1.	2.0
11	4.		3.	1.	⊙		2.	
12		4.	3.	2.	⊙	1.		
13	3.0		4.	2.	⊙	1.		
14				1.	4.	⊙	2.	3.
15					⊙	2.	1.	4.
16				3.	1.	⊙	3.	4.

Configurations at Half an Hour past 7 o' Clock.

17			3.	2.	⊙		1.	4.
18			3.	1.	⊙		2.	4.
19	2●		3.		⊙		1.	4.
20	1.0		2.	3.	⊙			4.
21				1.	⊙	2.	3.	4.
22					⊙	1. 2 4		3.
23			2.	1. 4.	⊙		3.	
24		4.		2.	⊙		1.	
25		4.	3.	1.	⊙		2.	
26	4.		3.		⊙		1.	2●
27	4.		2.	3.	1.	⊙		
28	4.				⊙	2.	3.	1●
29		4.			⊙	1.	2.	3.
30			4.	2.	1.	⊙		3.
31	3● 4.0			2.	⊙		1.	

I. SEPTEMBER 1780. [97]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
1	F.	Giles.	First Quarter —	5. 5. 20
2	Sa.	London burnt 1666, O.S.	Full Moon —	13. 6. 57
			Last Quarter —	21. 4. 32
			New Moon —	27. 19. 23
3	Su.	15th Sunday after Trinity.	D. Other Phenomena.	
4	M.		1. ☾ ♄ 16 ^h . 43'.	
5	Tu.		2. ☾ ♄ 20 ^h . 35'.	
6	W.		4. ☾ ♄ 3 ^h . 26'.	
7	Th.	Enurchus.	4. ☾ ♄ diff. Lat. 43'.	
8	F.	Nativity of B. V. Mary.	7. ☾ ♄ 2 ^h . 2'.	
9	Sa.		10. ☾ ♄ 9 ^h . 30'.	
10	Su.	16th Sunday after Trinity.	12. ☾ ♄ 14 ^h . 13'.	
11	M.		12. ☾ ♄ 15 ^h . 6'.	
12	Tu.		12. ☾ ♄ Im. 16 ^h . 23 ¹ / ₂ '.	
13	W.		* 7 ¹ / ₄ N. of ♄'s cent.	
14	Th.	Holy Cross.	♄ set before the Em.	
15	F.		13. ♄ ♄ diff. Lat. 22'.	
16	Sa.		15. ♄ ♄ diff. Lat. 1 ^o . 2'.	
17	Su.	17th S. after Tr. Lambert.	20. ☾ 125 ♄ 16 ^h . 9'.	
18	M.		21. ☾ enters ♄ at 23 ^h . 31'.	
19	Tu.		23. ☾ ♄ 3 ^h . 24'.	
20	W.		23. ♄ ♄ diff. Lat. 40'.	
21	Th.	St. Matthew.	25. ☾ ♄ 2 ^h . 31'.	
22	F.	K. Geo. III. crown'd 1761.	27. ☾ ♄ diff. Lat. 44'.	
23	Sa.		30. ☾ ♄ 6 ^h . 24'.	
24	Su.	18th Sunday after Trinity.		
25	M.			
26	Tu.	St. Cyprian.		
27	W.			
28	Th.			
29	F.	St. Mich. Prs. Char. born.		
30	Sa.	S Jerome.		

[98] SEPTEMBER 1780. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	
1	F.	5. 9. 32. 59	10. 44. 28, 0	7. 59. 55	0. 28, 4	18, 9
2	Sa.	5. 10. 31. 11	10. 48. 5, 6	7. 37. 56	0. 47, 3	19, 2
3	Su.	5. 11. 29. 25	10. 51. 43, 0	7. 15. 49	1. 6, 5	19, 4
4	M.	5. 12. 27. 41	10. 55. 20, 0	6. 53. 35	1. 25, 9	19, 7
5	Tu.	5. 13. 25. 58	10. 58. 56, 8	6. 31. 14	1. 45, 6	19, 9
6	W.	5. 14. 24. 16	11. 2. 33, 4	6. 8. 47	2. 5, 5	20, 2
7	Th.	5. 15. 22. 36	11. 6. 9, 8	5. 46. 14	2. 25, 7	20, 3
8	F.	5. 16. 20. 58	11. 9. 45, 9	5. 23. 35	2. 46, 0	20, 5
9	Sa.	5. 17. 19. 21	11. 13. 21, 9	5. 0. 51	3. 6, 5	20, 7
10	Su.	5. 18. 17. 45	11. 16. 57, 7	4. 38. 3	3. 27, 2	20, 8
11	M.	5. 19. 16. 12	11. 20. 33, 5	4. 15. 8	3. 48, 0	20, 9
12	Tu.	5. 20. 14. 39	11. 24. 9, 1	3. 52. 10	4. 8, 9	21, 0
13	W.	5. 21. 13. 9	11. 27. 44, 6	3. 29. 8	4. 29, 9	21, 0
14	Th.	5. 22. 11. 41	11. 31. 20, 0	3. 6. 2	4. 50, 9	21, 1
15	F.	5. 23. 10. 14	11. 34. 55, 4	2. 42. 52	5. 12, 0	21, 1
16	Sa.	5. 24. 8. 50	11. 38. 30, 8	2. 19. 39	5. 33, 1	21, 1
17	Su.	5. 25. 7. 28	11. 42. 6, 2	1. 56. 23	5. 54, 2	21, 0
18	M.	5. 26. 6. 8	11. 45. 41, 7	1. 33. 5	6. 15, 2	21, 0
19	Tu.	5. 27. 4. 50	11. 49. 17, 2	1. 9. 44	6. 36, 2	20, 9
20	W.	5. 28. 3. 35	11. 52. 52, 8	0. 46. 21	6. 57, 1	20, 8
21	Th.	5. 29. 2. 22	11. 56. 28, 5	0. 22. 57 South.	7. 17, 9	20, 7
22	F.	6. 0. 1. 11	12. 0. 4, 3	0. 0. 28	7. 38, 6	20, 5
23	Sa.	6. 1. 0. 3	12. 3. 40, 3	0. 23. 55	7. 59, 1	20, 4
24	Su.	6. 1. 58. 57	12. 7. 16, 5	0. 47. 22	8. 19, 5	20, 2
25	M.	6. 2. 57. 53	12. 10. 52, 8	1. 10. 49	8. 39, 7	20, 0
26	Tu.	6. 3. 56. 52	12. 14. 29, 3	1. 34. 16	8. 59, 7	19, 7
27	W.	6. 4. 55. 53	12. 18. 6, 0	1. 57. 43	9. 19, 4	19, 5
28	Th.	6. 5. 54. 56	12. 21. 43, 0	2. 21. 8	9. 38, 9	19, 3
29	F.	6. 6. 54. 1	12. 25. 20, 2	2. 44. 33	9. 58, 2	19, 0
30	Sa.	6. 7. 53. 8	12. 28. 57, 7	3. 7. 56	10. 17, 2	

III. SEPTEMBER 1780. [99]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 55. 1	1. 4. 3	2. 25. 4	0,003525	1. 17. 8
7	15. 56. 6	1. 4. 1	2. 25. 8	0,002841	1. 16. 49
13	15. 58. 1	1. 4. 0	2. 26. 3	0,002126	1. 16. 39
19	15. 59. 7	1. 4. 0	2. 26. 8	0,001411	1. 16. 10
25	16. 1. 3	1. 4. 1	2. 27. 3	0,000688	1. 15. 51

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	17. 26. 53	2	13. 40. 24	7	13. 28. 21 I.
4	11. 56. 3	6	3. 0. 4	7	15. 4. 22 E.
6	6. 25. 13	9	16. 19. 47	14	17. 29. 35 I.
8	0. 54. 22	13	5. 39. 36	14	19. 5. 5 E.
9	19. 23. 33	16	18. 59. 22	21	23. 5. 45 E.
11	13. 52. 45	*20	8. 19. 5	29	3. 6. 22 E.
*13	8. 21. 55	23	21. 38. 49	IV. Satellite. Conj.	
15	2. 51. 5	27	10. 58. 31		
16	21. 20. 15			8	19. 11 Sup.
18	15. 49. 25			17	6. 1 Inf.
20	10. 18. 35			25	15. 31 Sup.
22	4. 47. 45				
23	23. 16. 54				
25	17. 46. 2				
27	12. 15. 10				
29	6. 44. 16				

[100] SEPTEMBER 1780. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Decli- nation.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Greatest Elong. 13 ^d .						
1	11. 23. 43	5. 32 S	5. 2. 2	2. 56 S	8. 0 N	23. 22
4	0. 8. 24	4. 16	5. 0. 27	2. 2	9. 26	23. 8
7	0. 24. 26	2. 33	5. 0. 4	1. 4	10. 28	22. 59
10	1. 11. 45	0. 29 S	5. 1. 3	0. 11 S	10. 57	22. 55
13	2. 0. 7	1. 45 N	5. 3. 21	0. 34 N	10. 50	22. 55
16	2. 10. 0	3. 51	5. 6. 45	1. 9	10. 7	22. 59
19	3. 7. 48	5. 32	5. 11. 2	1. 34	8. 53	23. 6
22	3. 25. 51	6. 35	5. 15. 53	1. 48	7. 14	23. 14
25	4. 12. 43	6. 59	5. 21. 5	1. 53	5. 16	23. 22
28	4. 28. 10	6. 50	5. 26. 26	1. 51	3. 7	23. 31
30	5. 7. 40	6. 30	6. 0. 1	1. 46	1. 37	23. 37
VENUS.						
1	11. 23. 16	3. 21 S	4. 9. 57	6. 57 S	11. 4 N	21. 55
7	0. 2. 49	3. 13	4. 10. 45	6. 6	11. 41	21. 38
13	0. 12. 22	3. 0	4. 12. 45	5. 10	12. 2	21. 26
19	0. 21. 56	2. 42	4. 15. 47	4. 14	12. 5	21. 18
25	1. 1. 31	2. 19	4. 19. 37	3. 20	11. 47	21. 12
MARS.						
1	4. 15. 50	1. 51 N	4. 24. 46	1. 10 N	14. 33 N	23. 4
7	4. 18. 28	1. 51	4. 28. 34	1. 11	13. 6	22. 57
13	4. 21. 6	1. 51	5. 2. 22	1. 11	11. 45	22. 50
19	4. 23. 44	1. 50	5. 6. 10	1. 12	10. 22	22. 43
25	4. 26. 21	1. 50	5. 9. 58	1. 12	8. 57	22. 36
JUPITER.						
1	7. 3. 8	1. 12 N	6. 25. 28	1. 4 N	8. 52 S	2. 51
7	7. 3. 35	1. 12	6. 26. 24	1. 3	9. 16	2. 34
13	7. 4. 3	1. 12	6. 27. 43	1. 3	9. 42	2. 16
19	7. 4. 30	1. 11	6. 28. 55	1. 2	10. 8	1. 59
25	7. 4. 58	1. 11	7. 0. 8	1. 1	10. 35	1. 42
SATURN.						
1	8. 8. 21	1. 43 N	8. 2. 38	1. 43 N	19. 2 S	5. 18
7	8. 8. 32	1. 43	8. 2. 55	1. 41	19. 7	4. 58
13	8. 8. 43	1. 43	8. 3. 15	1. 40	19. 12	4. 38
19	8. 8. 51	1. 42	8. 3. 38	1. 39	19. 17	4. 18
25	8. 9. 5	1. 42	8. 4. 4	1. 38	19. 23	3. 58

V. SEPTEMBER 1780. [101]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	F.	6. 15. 26. 20	6. 22. 45. 14	2. 34. 46 N	2. 0. 9 N
2	Sa.	6. 29. 57. 27	7. 7. 2. 43	1. 24. 5	0. 47. 14 N
3	Su.	7. 14. 0. 57	7. 20. 52. 11	0. 10. 15 N	0. 26. 17 S
4	M.	7. 27. 36. 40	8. 4. 14. 44	1. 1. 53 S	1. 36. 7
5	Tu.	8. 10. 46. 47	8. 17. 13. 18	2. 8. 33	2. 38. 51
6	W.	8. 23. 34. 45	8. 29. 51. 41	3. 6. 47	3. 32. 5
7	Th.	9. 6. 4. 37	9. 12. 14. 3	3. 54. 34	4. 14. 7
8	F.	9. 18. 20. 29	9. 24. 24. 22	4. 30. 36	4. 43. 53
9	Sa.	10. 0. 26. 7	10. 6. 26. 9	4. 53. 54	5. 0. 35
10	Su.	10. 12. 24. 48	10. 18. 22. 24	5. 3. 58	5. 4. 3
11	M.	10. 24. 19. 14	11. 0. 15. 33	5. 0. 49	4. 54. 19
12	Tu.	11. 6. 11. 35	11. 12. 7. 30	4. 44. 38	4. 31. 52
13	W.	11. 18. 3. 32	11. 23. 59. 53	4. 16. 8	3. 57. 34
14	Th.	11. 29. 56. 43	0. 5. 54. 12	3. 36. 22	3. 12. 43
15	F.	0. 11. 52. 35	0. 17. 52. 7	2. 46. 51	2. 19. 2
16	Sa.	0. 23. 53. 4	0. 29. 55. 43	1. 49. 30	1. 18. 32
17	Su.	1. 6. 0. 25	1. 12. 7. 33	0. 46. 28 S	0. 13. 37 S
18	M.	1. 18. 17. 32	1. 24. 30. 46	0. 19. 42 N	0. 53. 4 N
19	Tu.	2. 0. 47. 44	2. 7. 8. 54	1. 26. 9	1. 58. 35
20	W.	2. 13. 34. 44	2. 20. 5. 42	2. 29. 55	2. 59. 45
21	Th.	2. 26. 42. 13	3. 3. 24. 38	3. 27. 37	3. 53. 2
22	F.	3. 10. 13. 14	3. 17. 8. 15	4. 15. 34	4. 34. 45
23	Sa.	3. 24. 9. 45	4. 1. 17. 40	4. 50. 8	5. 1. 17
24	Su.	4. 8. 31. 45	4. 15. 51. 37	5. 7. 50	5. 9. 28
25	M.	4. 23. 16. 37	5. 0. 45. 56	5. 5. 59	4. 57. 16
26	Tu.	5. 8. 18. 34	5. 15. 53. 22	4. 43. 19	4. 24. 20
27	W.	5. 23. 29. 4	6. 1. 4. 21	4. 0. 39	3. 32. 42
28	Th.	6. 8. 37. 56	6. 16. 8. 33	3. 1. 6	2. 26. 30
29	F.	6. 23. 35. 4	7. 0. 56. 31	1. 49. 41	1. 11. 22 N
30	Sa.	7. 8. 12. 7	7. 15. 21. 19	0. 32. 21	0. 6. 37 S

[102] SEPTEMBER 1780. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	F.	4	2. 22	195. 13	201. 48	3. 42 S	6. 59 S
2	Sa.	5	3. 12	208. 22	214. 58	10. 9	13. 8
3	Su.	6	4. 3	221. 36	228. 18	15. 54	18. 25
4	M.	7	4. 56	235. 5	241. 56	20. 39	22. 36
5	Tu.	8	5. 49	248. 51	255. 50	24. 13	25. 29
6	W.	9	6. 43	262. 50	269. 51	26. 25	27. 0
7	Th.	10	7. 37	276. 49	283. 44	27. 14	27. 7
8	F.	11	8. 30	290. 33	297. 15	26. 41	25. 55
9	Sa.	12	9. 20	303. 48	310. 11	24. 52	23. 32
10	Su.	13	10. 8	316. 25	322. 29	21. 57	20. 9
11	M.	14	10. 52	328. 23	334. 8	18. 9	15. 59
12	Tu.	15	11. 35	339. 46	345. 17	13. 39	11. 12
13	W.	16	12. 15	350. 42	356. 4	8. 39	6. 1
14	Th.	17	12. 55	1. 23	6. 41	3. 20 S	0. 36 S
15	F.	18	13. 35	12. 0	17. 22	2. 9 N	4. 53 N
16	Sa.	19	14. 17	22. 47	28. 18	7. 35	10. 14
17	Su.	20	15. 1	33. 57	39. 45	12. 48	15. 16
18	M.	21	15. 48	45. 44	51. 55	17. 36	19. 46
19	Tu.	22	16. 39	58. 19	64. 58	21. 44	23. 29
20	W.	23	17. 34	71. 51	78. 58	24. 56	26. 5
21	Th.	24	18. 33	86. 19	93. 50	26. 53	27. 18
22	F.	25	19. 33	101. 29	109. 14	27. 19	26. 55
23	Sa.	26	20. 34	117. 0	124. 45	26. 4	24. 48
24	Su.	27	21. 33	132. 25	139. 58	23. 6	21. 1
25	M.	28	22. 29	147. 23	154. 39	18. 35	15. 51
26	Tu.	29	23. 23	161. 46	168. 45	12. 51	9. 38
27	W.	1	0	175. 37	182. 24	6. 16 N	2. 49 N
28	Th.	2	0. 15	189. 7	195. 49	0. 39 S	4. 6 S
29	F.	3	1. 7	202. 30	209. 14	7. 28	10. 42
30	S.	4	1. 59	216. 0	222. 51	13. 45	16. 34

VII. SEPTEMBER 1780. [103]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Proport. Δ at Noon.	Proport. Δ at Midn.
		M. S.	M. S.	M. S.	M. S.	Lo.	Lo.
1	F.	16. 30	16. 24	60. 34	60. 10	4730	4759
2	Sa.	16. 17	16. 10	59. 46	59. 19	4788	4821
3	Su.	16. 2	15. 54	58. 51	58. 23	4855	4890
4	M.	15. 47	15. 39	57. 54	57. 27	4926	4960
5	Tu.	15. 32	15. 25	57. 1	56. 36	4992	5025
6	W.	15. 19	15. 13	56. 12	55. 51	5055	5082
7	Th.	15. 8	15. 3	55. 32	55. 15	5107	5129
8	F.	14. 59	14. 55	54. 59	54. 46	5150	5167
9	Sa.	14. 53	14. 50	54. 36	54. 26	5181	5194
10	Su.	14. 48	14. 46	54. 18	54. 12	5205	5213
11	M.	14. 45	14. 44	54. 8	54. 6	5218	5221
12	Tu.	14. 44	14. 44	54. 5	54. 5	5222	5222
13	W.	14. 45	14. 46	54. 7	54. 10	5219	5215
14	Th.	14. 46	14. 48	54. 15	54. 20	5209	5202
15	F.	14. 50	14. 52	54. 26	54. 35	5194	5182
16	Sa.	14. 55	14. 58	54. 45	54. 56	5169	5154
17	Su.	15. 2	15. 5	55. 8	55. 22	5138	5120
18	M.	15. 9	15. 14	55. 37	55. 55	5100	5077
19	Tu.	15. 19	15. 25	56. 13	56. 34	5054	5027
20	W.	15. 30	15. 37	56. 55	57. 18	5000	4971
21	Th.	15. 43	15. 50	57. 42	58. 6	4941	4911
22	F.	15. 56	16. 3	58. 31	58. 56	4880	4849
23	Sa.	16. 10	16. 17	59. 22	59. 46	4817	4788
24	Su.	16. 23	16. 29	60. 8	60. 28	4761	4737
25	M.	16. 34	16. 38	60. 46	61. 1	4716	4698
26	Tu.	16. 40	16. 42	61. 12	61. 18	4685	4678
27	W.	16. 43	16. 42	61. 20	61. 17	4676	4679
28	Th.	16. 40	16. 36	61. 9	60. 57	4689	4703
29	F.	16. 32	16. 27	60. 41	60. 21	4722	4746
30	Sa.	16. 20	16. 13	59. 58	59. 32	4773	4805

[104] SEPTEMBER 1780. VIII.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	51. 42. 36	49. 52. 15	48. 2. 18	46. 12. 45
2		37. 11. 14	35. 24. 14	33. 37. 42	31. 51. 39
3		23. 8. 36	21. 25. 35	19. 43. 7	18. 1. 15
4	Fomal- haut.	92. 34. 38	90. 58. 10	89. 22. 4	87. 46. 22
5		79. 53. 41	78. 20. 19	76. 47. 20	75. 14. 45
6		67. 37. 37	66. 7. 21	64. 37. 28	63. 8. 0
7		55. 46. 31	54. 19. 26	52. 52. 48	51. 26. 36
8		44. 22. 38	42. 59. 25	41. 36. 47	40. 14. 46
9	α Arietis.	94. 55. 57	93. 27. 44	91. 59. 36	90. 31. 35
10		83. 12. 52	81. 45. 22	80. 17. 55	78. 50. 33
11		71. 34. 40	70. 7. 40	68. 40. 43	67. 13. 49
12		60. 0. 8	58. 33. 34	57. 7. 3	55. 40. 36
13	Aldeba- ran.	78. 19. 59	76. 51. 50	75. 23. 39	73. 55. 26
14		66. 33. 52	65. 5. 27	63. 36. 58	62. 8. 28
15		54. 45. 15	53. 16. 28	51. 47. 38	50. 18. 46
16		42. 53. 48	41. 24. 42	39. 55. 36	38. 26. 29
17		31. 1. 14	29. 32. 25	28. 3. 44	26. 35. 12
18	Pollux.	62. 3. 44	60. 30. 27	58. 56. 57	57. 23. 15
19		49. 31. 21	47. 56. 15	46. 20. 53	44. 45. 16
20		36. 43. 9	35. 5. 52	33. 28. 18	31. 50. 26
21		23. 36. 35			
19	The Sun.	116. 16. 35	114. 48. 59	113. 21. 6	111. 52. 58
20		104. 28. 0	102. 58. 7	101. 27. 55	99. 57. 24
21		92. 19. 54	90. 47. 22	89. 14. 29	87. 41. 15
22		79. 49. 39	78. 14. 13	76. 38. 24	75. 2. 13
23		66. 55. 32	65. 17. 2	63. 38. 11	61. 58. 57
24		53. 37. 25	51. 56. 2	50. 14. 20	48. 32. 18
25		39. 57. 38			

IX. SEPTEMBER 1780. [105

Distances of γ 's Center from $\odot$, and from Stars east of her

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hour.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	44. 23. 36	42. 34. 51	40. 46. 33	38. 58. 40
2		30. 6. 3	28. 20. 55	26. 36. 17	24. 52. 12
3		16. 19. 59			
3	Fomalhaut.	99. 4. 21	97. 26. 21	95. 48. 44	94. 11. 29
4		86. 11. 3	84. 36. 7	83. 1. 35	81. 27. 20
5		73. 42. 33	72. 10. 44	70. 39. 18	69. 8. 16
6		61. 38. 54	60. 10. 11	58. 41. 53	57. 14. 0
7		50. 0. 51	48. 35. 32	47. 10. 43	45. 46. 29
8		38. 53. 23			
8	α Arietis.	100. 49. 55	99. 21. 16	97. 52. 43	96. 24. 17
9		89. 3. 40	87. 35. 50	86. 8. 6	84. 40. 26
10		77. 23. 15	75. 56. 1	74. 28. 50	73. 1. 43
11		65. 46. 59	64. 20. 11	62. 53. 27	61. 26. 46
12		54. 14. 12			
12	Aldebaran.	84. 12. 21	82. 44. 17	81. 16. 12	79. 48. 6
13		72. 27. 12	70. 58. 55	69. 30. 36	68. 2. 15
14		60. 39. 55	59. 11. 19	57. 42. 40	56. 13. 59
15		48. 49. 51	47. 20. 53	45. 51. 53	44. 22. 52
16		36. 57. 23	35. 28. 15	33. 59. 11	32. 30. 11
17		25. 6. 52			
17	Pollux.	68. 14. 56	66. 42. 25	65. 9. 42	63. 36. 49
18		55. 49. 20	54. 15. 11	52. 40. 49	51. 6. 12
19		43. 9. 23	41. 33. 14	39. 56. 49	38. 20. 7
20		30. 12. 17	28. 33. 49	26. 55. 3	25. 15. 58
19	The Sun.	110. 24. 33	108. 55. 51	107. 26. 51	105. 57. 34
20		98. 26. 34	96. 55. 23	95. 23. 52	93. 52. 3
21		86. 7. 40	84. 33. 43	82. 59. 23	81. 24. 42
22		73. 25. 39	71. 48. 41	70. 11. 21	68. 33. 38
23		60. 19. 22	58. 39. 24	56. 59. 6	55. 18. 26
24		46. 49. 57	45. 7. 18	43. 24. 21	41. 41. 8

[106] S E P T E M B E R 1780. X.

Distances of J's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
2	The Sun.	49. 27. 9	51. 6. 37	52. 45. 41	54. 24. 22
3		62. 31. 32	64. 7. 41	65. 43. 26	67. 18. 45
4		75. 9. 7	76. 41. 57	78. 14. 25	79. 46. 28
5		87. 20. 56	88. 50. 42	90. 20. 8	91. 49. 13
6		99. 9. 40	100. 36. 48	102. 3. 39	103. 30. 13
7		110. 39. 0	112. 3. 59	113. 28. 45	114. 53. 18
6	Spica ♀	62. 44. 30	64. 18. 54	65. 53. 1	67. 26. 52
7		75. 12. 10	76. 44. 29	78. 16. 35	79. 48. 29
8		87. 24. 54	88. 55. 38	90. 26. 12	91. 56. 37
9	Antares.	53. 32. 31	55. 2. 13	56. 31. 48	58. 1. 18
10		65. 27. 28	66. 56. 29	68. 25. 27	69. 54. 22
11		77. 18. 15	78. 46. 56	80. 15. 36	81. 44. 16
12		89. 7. 26	90. 36. 4	92. 4. 42	93. 33. 21
13		100. 56. 57	102. 25. 46	103. 54. 37	105. 23. 31
14	α Aquilæ.	67. 11. 48	68. 22. 46	69. 34. 7	70. 45. 49
15		76. 49. 11	78. 2. 42	79. 16. 26	80. 30. 24
16		86. 43. 5			
16	Fomal- haut.	55. 10. 6	56. 35. 35	58. 1. 20	59. 27. 23
17		66. 41. 40	68. 9. 17	69. 37. 9	71. 5. 15
18		78. 29. 23	79. 58. 55	81. 28. 41	82. 58. 42
19		90. 32. 15			
19	α Arietis.	27. 24. 0	28. 51. 26	30. 19. 42	31. 48. 48
20		39. 25. 30	40. 58. 43	42. 32. 30	44. 6. 49
21		52. 5. 59	53. 43. 14	55. 20. 56	56. 59. 6
22		65. 16. 34	66. 57. 21	68. 38. 34	70. 20. 11
23	Aldeba- ran.	48. 28. 59	50. 13. 30	51. 58. 27	53. 43. 51
24		62. 37. 12	64. 25. 5	66. 13. 19	68. 1. 56
25		77. 10. 6	79. 0. 40	80. 51. 30	82. 42. 35
26		92. 1. 23	93. 53. 41	95. 46. 4	97. 38. 34

XI. SEPTEMBER 1780. [107]

Distances of D's Center from ☉, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	42. 45. 25	44. 26. 25	46. 7. 2	47. 47. 17
2		56. 2. 38	57. 40. 29	59. 17. 55	60. 54. 56
3		68. 53. 40	70. 28. 8	72. 2. 12	73. 35. 52
4		81. 18. 8	82. 49. 24	84. 20. 17	85. 50. 48
5		93. 17. 58	94. 46. 22	96. 14. 27	97. 42. 13
6		104. 56. 30	106. 22. 30	107. 48. 16	109. 13. 45
7		116. 17. 37			
5	Spica ♏	56. 23. 53	57. 59. 30	59. 34. 48	61. 9. 49
6		69. 0. 26	70. 33. 44	72. 6. 48	73. 39. 36
7		81. 20. 9	82. 51. 37	84. 22. 54	85. 53. 59
8		93. 26. 52			
8	Antares.	47. 32. 35	49. 2. 44	50. 32. 47	52. 2. 42
9		59. 30. 42	61. 0. 0	62. 29. 14	63. 58. 23
10		71. 23. 13	72. 52. 1	74. 20. 48	75. 49. 32
11		83. 12. 54	84. 41. 32	86. 10. 10	87. 38. 48
12		95. 2. 1	96. 30. 43	97. 59. 26	99. 28. 11
13		106. 52. 27			
13	α Aquilæ.	62. 32. 13	63. 41. 27	64. 51. 6	66. 1. 14
14		71. 57. 54	73. 10. 17	74. 22. 57	75. 35. 56
15		81. 44. 35	82. 58. 59	84. 13. 31	85. 28. 13
16	Fomalhaut.	60. 53. 43	62. 20. 19	63. 47. 10	65. 14. 18
17		72. 33. 36	74. 2. 12	75. 31. 1	77. 0. 5
18		84. 28. 56	85. 59. 25	87. 30. 7	89. 1. 4
19	α Arietis.	33. 18. 44	34. 49. 25	36. 20. 47	37. 52. 48
20		45. 41. 41	47. 17. 2	48. 52. 52	50. 29. 11
21		58. 37. 43	60. 16. 47	61. 56. 16	63. 36. 12
22		72. 2. 14			
22	Aldebaran.	41. 35. 41	43. 18. 17	45. 1. 22	46. 44. 56
23		55. 29. 42	57. 15. 58	59. 2. 38	60. 49. 43
24		69. 50. 55	71. 40. 14	73. 29. 52	75. 19. 50
25		84. 33. 56	86. 25. 30	88. 17. 16	90. 9. 14
26		99. 31. 12			

Configurations of the SATELLITES of JUPITER
at 8 o' Clock in the Evening.

1		2.	1.	⊙	2 6 4	
2		3.		⊙ 2.	1.	4.
3		2.	3.	1.	⊙	4.
4				⊙ 1.	2.	3.
5				⊙	2.	3.
6		2.	1.	⊙	3.	4.
7			2.	⊙ 3.	1.	4.
8		3.	1.	⊙	4.	2.
9		3.	4.	⊙ 2.	1.	
10		4.	2.	3.	1.	⊙
11	2.	4.		⊙ 1.	3.	
12	4.			1.	⊙	2.
13	4.			2.	1.	⊙

at 7 o' Clock in the Evening.

14	4.		2.	⊙ 1.	3.	
15	4.		3.	1.	⊙	2.
16	3.	4.		⊙	1.	2.
17		3.	2.	1.	⊙	4.
18			2.	⊙	1.	4.
19			1.	⊙	2.	3.
20			2.	⊙ 1.	3.	4.
21		2.		⊙ 1.	3.	4.
22			3.	1.	⊙	2.
23		3.		⊙	1.	2.
24		3.	2.	1.	⊙	4.
25			2.	3.	⊙	4.

I. OCTOBER 1780. [109]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
1	Su.	19th Sunday after Trinity. [Remigius.	First Quarter — 4. 19. 48
2	M.		Full Moon — 13. 0. 0
3	Tu.		Last Quarter — 20. 13. 58
4	W.		New Moon — 27. 5. 26
5	Th.		D. Other Phenomena.
6	F.		
7	Sa.	Faith.	1. ☾ ♄ ♀ 12 ^h . 2'.
8	Su.	20th Sunday after Trinity.	4. ☾ ☽ ♄ 9 ^h . 10'.
9	M.	St. Denys.	4. ☾ ♄ ♀ 18 ^h . 6'.
10	Tu.	Oxford and Cam. Terms [begin.	4. ☽ ♄ ♀ diff. Lat. 30'.
11	W.		7. ☾ ♄ ♀ 16 ^h . 2'.
12	Th.	Transf. of K. Edw. Conf.	9. ☾ ♄ ♀ 20 ^h . 45'.
13	F.		9. ☾ ♄ ♀ 21 ^h . 38'.
14	Sa.		9. ☾ ♄ ♀ 21 ^h . 46'.
15	Su.	21st Sunday after Trinity.	13. ♄ ♄ ♀ diff. Lat. 29'.
16	M.	Etheldred. St. Luke.	17. ☾ 125 ☽ 21 ^h . 54'.
17	Tu.		19. ☾ ♄ ♀ 23 ^h . 54'.
18	W.		20. ☾ ♄ ♀ 10 ^h . 19'.
19	Th.		22. ☾ ♄ ♀ 11 ^h . 2'.
20	F.		22. ☾ enters ♀ at 7 ^h . 21'.
21	Sa.	22d Sunday after Trinity.	25. ☾ ♄ ♀ 8 ^h . 8'.
22	Su.		27. ☾ eclipsed, invifible.
23	M.		28. ☾ ♄ ♀ 22 ^h . 43'.
24	Tu.		31. ☾ ☽ ♄ 18 ^h . 24'.
25	W.	K. Geo. III. Acces. Crisp.	
26	Th.	K. Geo. III. procl. 1760.	
27	F.	St. Simon and St. Jude.	
28	Sa.		
29	Su.	23d Sunday after Trinity.	
30	M.		
31	Tu.		

[110] OCTOBER 1780. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Su.	6. 8. 52. 17	12. 32. 35, 5	3. 31. 17	10. 36, 0	18, 5
2	M.	6. 9. 51. 28	12. 36. 13, 5	3. 54. 35	10. 54, 5	18, 2
3	Tu.	6. 10. 50. 41	12. 39. 51, 8	4. 17. 50	11. 12, 7	17, 8
4	W.	6. 11. 49. 55	12. 43. 30, 5	4. 41. 2	11. 30, 5	17, 4
5	Th.	6. 12. 49. 11	12. 47. 9, 6	5. 4. 11	11. 47, 9	17, 1
6	F.	6. 13. 48. 29	12. 50. 49, 0	5. 27. 16	12. 5, 0	16, 7
7	Sa.	6. 14. 47. 49	12. 54. 28, 8	5. 50. 17	12. 21, 7	16, 3
8	Su.	6. 15. 47. 10	12. 58. 9, 0	6. 13. 13	12. 38, 0	15, 8
9	M.	6. 16. 46. 33	13. 1. 49, 7	6. 36. 3	12. 53, 8	15, 4
10	Tu.	6. 17. 45. 58	13. 5. 30, 8	6. 58. 48	13. 9, 2	15, 0
11	W.	6. 18. 45. 25	13. 9. 12, 3	7. 21. 28	13. 24, 2	14, 4
12	Th.	6. 19. 44. 54	13. 12. 54, 4	7. 44. 2	13. 38, 6	14, 0
13	F.	6. 20. 44. 25	13. 16. 37, 0	8. 6. 29	13. 52, 6	13, 4
14	Sa.	6. 21. 43. 57	13. 20. 20, 1	8. 28. 49	14. 6, 0	12, 8
15	Su.	6. 22. 43. 32	13. 24. 3, 8	8. 51. 2	14. 18, 8	12, 3
16	M.	6. 23. 43. 9	13. 27. 48, 0	9. 13. 7	14. 31, 1	11, 7
17	Tu.	6. 24. 42. 48	13. 31. 32, 9	9. 35. 5	14. 42, 8	11, 0
18	W.	6. 25. 42. 30	13. 35. 18, 4	9. 56. 55	14. 53, 8	10, 3
19	Th.	6. 26. 42. 14	13. 39. 4, 6	10. 18. 36	15. 4, 1	9, 7
20	F.	6. 27. 42. 0	13. 42. 51, 4	10. 40. 8	15. 13, 8	9, 1
21	Sa.	6. 28. 41. 49	13. 46. 38, 9	11. 1. 31	15. 22, 9	8, 3
22	Su.	6. 29. 41. 40	13. 50. 27, 1	11. 22. 43	15. 31, 2	7, 6
23	M.	7. 0. 41. 33	13. 54. 16, 1	11. 43. 45	15. 38, 8	6, 8
24	Tu.	7. 1. 41. 29	13. 58. 5, 8	12. 4. 37	15. 45, 6	6, 1
25	W.	7. 2. 41. 27	14. 1. 56, 2	12. 25. 18	15. 51, 7	5, 4
26	Th.	7. 3. 41. 27	14. 5. 47, 3	12. 45. 48	15. 57, 1	4, 7
27	F.	7. 4. 41. 29	14. 9. 39, 2	13. 6. 6	16. 1, 8	3, 9
28	Sa.	7. 5. 41. 33	14. 13. 31, 9	13. 26. 11	16. 5, 7	3, 1
29	Su.	7. 6. 41. 39	14. 17. 25, 3	13. 46. 3	16. 8, 8	2, 3
30	M.	7. 7. 41. 47	14. 21. 19, 5	14. 5. 42	16. 11, 1	1, 7
31	Tu.	7. 8. 41. 57	14. 25. 14, 4	14. 25. 8	16. 12, 8	

III. OCTOBER 1780. [111]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 3,0	1. 4,3	2. 27,9	9,999937	1. 15. 32
7	16. 4,6	1. 4,7	2. 28,5	9,999166	1. 15. 13
13	16. 6,2	1. 5,1	2. 28,9	9,998405	1. 14. 54
19	16. 7,9	1. 5,6	2. 29,3	9,997685	1. 14. 35
25	16. 9,6	1. 6,2	2. 29,8	9,996994	1. 14. 16

The Eclipses of JUPITER's Satellites will not be
visible this Month, JUPITER being too
near the Sun.

[112] OCTOBER 1780. IV.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Sup. δ 10^d. 7ⁿ.

1	5. 12. 11	6. 16 N	6. 1. 49	1. 44 N	0. 52 N	23. 40
4	5. 24. 56	5. 26	6. 7. 10	1. 32	1. 26 S	23. 48
7	6. 6. 33	4. 26	6. 12. 26	1. 17	3. 45	23. 56
10	6. 17. 14	3. 21	6. 17. 37	0. 59	6. 1	0. 1
13	6. 27. 11	2. 14	6. 22. 41	0. 40	8. 13	0. 8
16	7. 6. 33	1. 6	6. 27. 40	0. 20 N	10. 20	0. 15
19	7. 15. 28	0. 2 N	7. 2. 33	0. 0 S	12. 22	0. 22
22	7. 24. 3	1. 1 S	7. 7. 20	0. 20	14. 18	0. 29
25	8. 2. 26	2. 1	7. 12. 3	0. 40	16. 7	0. 36
28	8. 11. 42	2. 58	7. 16. 41	0. 59	17. 49	0. 43
31	8. 18. 56	3. 51	7. 21. 16	1. 18	19. 23	0. 49

VENUS.

1	1. 11. 6	1. 53 S	4. 24. 6	2. 29 S	11. 9 N	21. 9
7	1. 20. 44	1. 22	4. 29. 6	1. 41	10. 14	21. 8
13	2. 0. 22	0. 50	5. 4. 31	0. 57	8. 59	21. 8
19	2. 10. 1	0. 17 S	5. 10. 17	0. 18 S	7. 27	21. 8
25	2. 19. 42	0. 18 N	5. 16. 21	0. 17 N	5. 41	21. 8

MARS.

1	4. 28. 58	1. 49 N	5. 13. 44	1. 12 N	7. 31 N	22. 28
7	5. 1. 35	1. 47	5. 17. 31	1. 12	6. 3	22. 20
13	5. 4. 12	1. 46	5. 21. 18	1. 12	4. 34	22. 12
19	5. 6. 49	1. 45	5. 25. 5	1. 12	3. 4	22. 4
25	5. 9. 27	1. 44	5. 28. 51	1. 12	1. 33	21. 55

JUPITER.

1	7. 5. 25	1. 11 N	7. 1. 23	1. 1 N	11. 0 S	1. 26
7	7. 5. 53	1. 11	7. 2. 39	1. 0	11. 26	1. 9
13	7. 6. 20	1. 10	7. 3. 56	1. 0	11. 54	0. 52
19	7. 6. 48	1. 10	7. 5. 14	0. 59	12. 21	0. 34
25	7. 7. 15	1. 10	7. 6. 33	0. 59	12. 48	0. 16

SATURN.

1	8. 9. 16	1. 42 N	8. 4. 32	1. 36 N	19. 30 S	3. 39
7	8. 9. 27	1. 41	8. 5. 4	1. 35	19. 36	3. 19
13	8. 9. 38	1. 41	8. 5. 37	1. 35	19. 42	2. 59
19	8. 9. 49	1. 41	8. 6. 12	1. 34	19. 49	2. 39
25	8. 9. 59	1. 40	8. 6. 48	1. 34	19. 56	2. 19

V. OCTOBER 1780. [113]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Su.	7. 22. 23. 47	7. 29. 19. 21	0. 44. 56 S	1. 22. 0 S
2	M.	8. 6. 7. 56	8. 12. 49. 45	1. 57. 16	2. 30. 19
3	Tu.	8. 19. 25. 6	8. 25. 54. 21	3. 0. 50	3. 28. 33
4	W.	9. 2. 17. 54	9. 8. 36. 16	3. 53. 14	4. 14. 44
5	Th.	9. 14. 49. 59	9. 20. 59. 37	4. 32. 57	4. 47. 48
6	F.	9. 27. 5. 41	10. 3. 8. 47	4. 59. 13	5. 7. 12
7	Sa.	10. 9. 9. 25	10. 15. 8. 7	5. 11. 46	5. 12. 53
8	Su.	10. 21. 5. 23	10. 27. 1. 42	5. 10. 38	5. 5. 3
9	M.	11. 2. 57. 29	11. 8. 53. 6	4. 56. 12	4. 44. 10
10	Tu.	11. 14. 48. 56	11. 20. 45. 19	4. 29. 5	4. 11. 3
11	W.	11. 26. 42. 33	0. 2. 40. 53	3. 50. 14	3. 26. 49
12	Th.	0. 8. 40. 32	0. 14. 41. 42	3. 1. 2	2. 33. 5
13	F.	0. 20. 44. 35	0. 26. 49. 22	2. 3. 14	1. 31. 50
14	Sa.	1. 2. 56. 14	1. 9. 5. 24	0. 59. 10 S	0. 25. 34 S
15	Su.	1. 15. 17. 0	1. 21. 31. 13	0. 8. 34 N	0. 42. 53 N
16	M.	1. 27. 48. 18	2. 4. 8. 30	1. 16. 57	1. 50. 22
17	Tu.	2. 10. 32. 0	2. 16. 59. 5	2. 22. 43	2. 53. 32
18	W.	2. 23. 29. 57	3. 0. 4. 52	3. 22. 26	3. 48. 57
19	Th.	3. 6. 44. 0	3. 13. 27. 34	4. 12. 42	4. 33. 15
20	F.	3. 20. 15. 42	3. 27. 8. 29	4. 50. 12	5. 3. 11
21	Sa.	4. 4. 5. 58	4. 11. 8. 4	5. 11. 54	5. 16. 5
22	Su.	4. 18. 14. 39	4. 25. 25. 28	5. 15. 30	5. 10. 0
23	M.	5. 2. 40. 9	5. 9. 58. 12	4. 59. 32	4. 44. 10
24	Tu.	5. 17. 19. 5	5. 24. 42. 0	4. 24. 3	3. 59. 27
25	W.	6. 2. 6. 13	6. 9. 30. 46	3. 30. 45	2. 58. 29
26	Th.	6. 16. 54. 44	6. 24. 17. 10	2. 23. 16	1. 45. 44
27	F.	7. 1. 37. 6	7. 8. 53. 39	1. 6. 38 N	0. 26. 43 N
28	Sa.	7. 16. 6. 3	7. 23. 13. 37	0. 13. 15 S	0. 52. 35 S
29	Su.	8. 0. 15. 46	8. 7. 12. 6	1. 30. 37	2. 6. 46
30	M.	8. 14. 2. 25	8. 20. 46. 35	2. 40. 34	3. 11. 37
31	Tu.	8. 27. 24. 38	9. 3. 56. 42	3. 39. 37	4. 4. 15

[114] OCTOBER 1780. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Decl. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Su.	5	2. 53	229. 47	236. 47	19. 7 S	21. 22 S
2	M.	6	3. 48	243. 53	251. 2	23. 17	24. 51
3	Tu.	7	4. 44	258. 13	265. 25	26. 3	26. 52
4	W.	8	5. 39	272. 35	279. 40	27. 20	27. 25
5	Th.	9	6. 34	286. 40	293. 31	27. 9	26. 34
6	F.	10	7. 25	300. 13	306. 45	25. 39	24. 27
7	Sa.	11	8. 13	313. 5	319. 15	22. 59	21. 17
8	Su.	12	8. 59	325. 14	331. 4	19. 23	17. 17
9	M.	13	9. 42	336. 45	342. 19	15. 2	12. 38
10	Tu.	14	10. 23	347. 47	353. 10	10. 7	7. 31
11	W.	15	11. 3	358. 31	3. 50	4. 51 S	2. 7 S
12	Th.	16	11. 43	9. 10	14. 31	0. 40 N	3. 27 N
13	F.	17	12. 24	19. 56	25. 27	6. 12	8. 54
14	Sa.	18	13. 7	31. 4	36. 50	11. 34	14. 8
15	Su.	19	13. 53	42. 46	48. 54	16. 34	18. 51
16	M.	20	14. 44	55. 14	61. 46	20. 56	22. 48
17	Tu.	21	15. 37	68. 32	75. 32	24. 24	25. 42
18	W.	22	16. 34	82. 44	90. 5	26. 40	27. 17
19	Th.	23	17. 33	97. 34	105. 8	27. 30	27. 19
20	F.	24	18. 31	112. 43	120. 16	26. 43	25. 43
21	Sa.	25	19. 29	127. 45	135. 9	24. 18	22. 31
22	Su.	26	20. 24	142. 25	149. 32	20. 22	17. 55
23	M.	27	21. 17	156. 30	163. 20	15. 11	12. 13
24	Tu.	28	22. 8	170. 4	176. 44	9. 4	5. 46 N
25	W.	29	22. 58	183. 20	189. 55	2. 23 N	1. 2 S
26	Th.	30	23. 49	196. 30	203. 8	4. 27 S	7. 47
27	F.	1	♂	209. 51	216. 39	11. 0	14. 3
28	Sa.	2	0. 42	223. 34	230. 36	16. 53	19. 27
29	Su.	3	1. 37	237. 45	245. 0	21. 42	23. 37
30	M.	4	2. 34	252. 20	259. 43	25. 10	26. 20
31	Tu.	5	3. 32	267. 6	274. 26	27. 6	27. 29

VII. OCTOBER 1780. [115]							
Days of the Month.	Days of the Week.	Semidr. » at Noon.	Semidr. » at Mid-night.	Hor. Par. » at Noon.	Hor. Par. » at Midnight.	Proport. Lo-ear. at Noon.	Proport. Lo-ear. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Su.	16. 6	15. 58	59. 5	58. 37	4838	4872
2	M.	15. 50	15. 42	58. 8	57. 39	4908	4945
3	Tu.	15. 35	15. 28	57. 11	56. 45	4980	5013
4	W.	15. 21	15. 15	56. 20	55. 57	5045	5075
5	Th.	15. 8	15. 3	55. 36	55. 17	5102	5127
6	F.	14. 59	14. 55	55. 0	54. 46	5149	5167
7	Sa.	14. 52	14. 50	54. 35	54. 26	5182	5194
8	Su.	14. 48	14. 47	54. 18	54. 14	5205	5210
9	M.	14. 46	14. 46	54. 11	54. 10	5214	5215
10	Tu.	14. 46	14. 47	54. 11	54. 14	5214	5210
11	W.	14. 48	14. 50	54. 18	54. 24	5205	5197
12	Th.	14. 51	14. 54	54. 31	54. 40	5187	5175
13	F.	14. 56	14. 59	54. 49	54. 59	5163	5150
14	Sa.	15. 2	15. 5	55. 10	55. 22	5136	5120
15	Su.	15. 9	15. 13	55. 35	55. 49	5103	5085
16	M.	15. 16	15. 21	56. 3	56. 18	5067	5048
17	Tu.	15. 25	15. 29	56. 34	56. 50	5027	5005
18	W.	15. 34	15. 39	57. 8	57. 25	4984	4962
19	Th.	15. 44	15. 49	57. 44	58. 2	4938	4916
20	F.	15. 54	15. 59	58. 22	58. 40	4891	4869
21	Sa.	16. 4	16. 9	58. 59	59. 17	4845	4823
22	Su.	16. 14	16. 18	59. 36	59. 51	4800	4782
23	M.	16. 23	16. 26	60. 6	60. 18	4764	4750
24	Tu.	16. 29	16. 31	60. 29	60. 36	4736	4728
25	W.	16. 32	16. 32	60. 39	60. 40	4724	4723
26	Th.	16. 31	16. 29	60. 35	60. 28	4729	4737
27	F.	16. 25	16. 22	60. 16	60. 1	4752	4770
28	Sa.	16. 17	16. 11	59. 43	59. 22	4792	4817
29	Su.	16. 4	15. 58	58. 59	58. 34	4845	4876
30	M.	15. 50	15. 43	58. 8	57. 42	4908	4941
31	Tu.	15. 36	15. 29	57. 16	56. 50	4973	5006

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Fomalhaut.	97. 32. 16	95. 51. 29	94. 11. 7	92. 31. 10
2		84. 17. 51	82. 40. 31	81. 3. 38	79. 27. 12
3		71. 31. 54	69. 58. 15	68. 25. 3	66. 52. 19
4	α Pegasi.	80. 9. 34	78. 42. 48	77. 16. 25	75. 50. 26
5		68. 46. 37	67. 23. 6	66. 0. 1	64. 37. 23
6		57. 51. 10			
6	α Arietis.	98. 13. 57	95. 44. 52	95. 15. 57	93. 47. 13
7		86. 25. 48	84. 57. 55	83. 30. 9	82. 2. 30
8		74. 45. 46	73. 18. 40	71. 51. 38	70. 24. 41
9		63. 10. 45	61. 44. 7	60. 17. 32	58. 51. 0
10	Aldebaran.	51. 39. 0			
10		81. 32. 28	80. 4. 22	78. 36. 14	77. 8. 2
11		69. 46. 11	68. 17. 36	66. 48. 57	65. 20. 13
12		57. 55. 28	56. 26. 17	54. 57. 2	53. 27. 42
13		45. 59. 59	44. 30. 14	43. 0. 28	41. 30. 39
14		34. 1. 25	32. 31. 36	31. 1. 55	29. 32. 22
15		22. 8. 15			
15	Regulus.	101. 29. 36	99. 56. 14	98. 22. 41	96. 48. 59
16		88. 57. 48	87. 23. 1	85. 48. 3	84. 12. 54
17		76. 14. 17	74. 37. 58	73. 1. 26	71. 24. 43
18		63. 18. 0	61. 40. 0	60. 1. 48	58. 23. 22
19		50. 7. 55	48. 28. 9	46. 48. 11	45. 7. 59
20		36. 43. 45	35. 2. 18	33. 20. 40	31. 38. 52
18	The Sun.	122. 8. 48	120. 37. 54	119. 6. 46	117. 35. 24
19		109. 54. 51	108. 21. 59	106. 48. 53	105. 15. 30
20		97. 24. 42	95. 49. 44	94. 14. 29	92. 38. 58
21		84. 37. 11	82. 59. 59	81. 22. 31	79. 44. 46
22		71. 31. 52	69. 52. 28	68. 12. 49	66. 32. 54
23		58. 9. 32	56. 28. 9	54. 46. 33	53. 4. 45
24		44. 32. 45	42. 49. 51	41. 6. 48	39. 23. 37
29	Fomalhaut.	89. 55. 50	88. 14. 56	86. 34. 24	84. 54. 16
30		76. 39. 43	75. 2. 7	73. 24. 59	71. 48. 19
31		63. 52. 10	62. 18. 26	60. 45. 14	59. 12. 34
N. 1		51. 37. 28			

IX. OCTOBER 1780. [117]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Fomalhaut.	90. 51. 38	89. 12. 32	87. 33. 52	85. 55. 38
2		77. 51. 13	76. 15. 42	74. 40. 38	73. 6. 2
3		65. 20. 3			
3	α Pegasi.	86. 0. 33	84. 32. 14	83. 4. 17	81. 36. 44
4		74. 24. 51	72. 59. 40	71. 34. 54	70. 10. 33
5		63. 15. 12	61. 53. 29	60. 32. 13	59. 11. 27
6	α Arietis.	92. 18. 38	90. 50. 13	89. 21. 56	87. 53. 48
7		80. 34. 58	79. 7. 32	77. 40. 11	76. 12. 56
8		68. 57. 45	67. 30. 56	66. 4. 10	64. 37. 26
9		57. 24. 31	55. 58. 4	54. 31. 40	53. 5. 19
10	Aldebaran.	75. 39. 47	74. 11. 29	72. 43. 7	71. 14. 41
11		63. 51. 25	62. 22. 32	60. 53. 35	59. 24. 34
12		51. 58. 18	50. 28. 49	48. 59. 16	47. 29. 39
13		40. 0. 49	38. 30. 56	37. 1. 4	35. 31. 14
14		28. 2. 59	26. 33. 51	25. 4. 59	23. 36. 26
15	Regulus.	95. 15. 6	93. 41. 3	92. 6. 48	90. 32. 24
16		82. 37. 33	81. 2. 1	79. 26. 18	77. 50. 23
17		69. 47. 47	68. 10. 39	66. 33. 19	64. 55. 46
18		56. 44. 43	55. 5. 51	53. 26. 45	51. 47. 27
19		43. 27. 34	41. 46. 55	40. 6. 4	38. 25. 1
20		29. 56. 55			
18	The Sun.	116. 3. 47	114. 31. 55	112. 59. 49	111. 27. 27
19		103. 41. 53	102. 7. 59	100. 33. 50	98. 59. 24
20		91. 3. 10	89. 27. 5	87. 50. 44	86. 14. 6
21		78. 6. 44	76. 28. 25	74. 49. 51	73. 10. 59
22		64. 52. 43	63. 12. 19	61. 31. 39	59. 50. 44
23		51. 22. 44	49. 40. 31	47. 58. 6	46. 15. 31
24		37. 40. 19			
28	Fomalhaut.	96. 43. 2	95. 0. 43	93. 18. 44	91. 37. 6
29		83. 14. 31	81. 35. 11	79. 56. 16	78. 17. 47
30		70. 12. 6	68. 36. 23	67. 1. 9	65. 26. 25
31		57. 40. 26	56. 8. 51	54. 37. 49	52. 7. 21

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	43. 31. 48	45. 9. 6	46. 45. 57	48. 22. 21
2		56. 17. 48	57. 51. 35	59. 24. 56	60. 57. 52
3		68. 36. 17	70. 6. 45	71. 36. 49	73. 6. 30
4		80. 29. 19	81. 56. 49	83. 23. 59	84. 50. 50
5		92. 0. 26	93. 25. 29	94. 50. 18	96. 14. 51
6		103. 14. 7	104. 37. 20	106. 0. 23	107. 23. 15
7		114. 15. 11	115. 37. 10	116. 59. 2	118. 20. 48
5	Antares.	38. 0. 51	39. 33. 8	41. 5. 11	42. 37. 0
6		50. 12. 50	51. 43. 24	53. 13. 48	54. 44. 1
7		62. 12. 46	63. 42. 7	65. 11. 22	66. 40. 31
8		74. 5. 0	75. 33. 42	77. 2. 21	78. 30. 58
9		85. 53. 44	87. 22. 16	88. 50. 49	90. 19. 23
10		97. 42. 39	99. 11. 26	100. 40. 16	102. 9. 10
11	α Aquilæ.	64. 39. 59	65. 50. 5	67. 0. 39	68. 11. 40
12		74. 12. 40	75. 25. 56	76. 39. 29	77. 53. 19
13		84. 6. 8			
13	Fomalhaut.	52. 13. 44	53. 39. 16	55. 5. 9	56. 31. 22
14		63. 47. 7	65. 15. 6	66. 43. 20	68. 11. 49
15		75. 37. 37	77. 7. 25	78. 37. 26	80. 7. 39
16		87. 41. 42			
16	α Arietis.	24. 38. 48	26. 4. 32	27. 31. 16	28. 58. 56
17		36. 29. 13	38. 1. 9	39. 33. 37	41. 6. 36
18		48. 57. 50	50. 33. 14	52. 9. 2	53. 45. 7
19		61. 50. 46	63. 28. 52	65. 7. 17	66. 46. 0
20		75. 4. 13			
20	Aldebaran.	44. 40. 51	46. 21. 33	48. 2. 38	49. 44. 3
21		58. 16. 24	59. 59. 52	61. 43. 38	63. 27. 43
22		72. 12. 40	73. 58. 33	75. 44. 42	77. 31. 8
23		86. 27. 8	88. 15. 4	90. 3. 12	91. 51. 34
24	Regulus.	20. 53. 28	22. 41. 3	24. 29. 14	26. 17. 56
25		35. 25. 48	37. 15. 55	39. 6. 8	40. 56. 28
26		50. 9. 3			

XI. OCTOBER 1780. [119]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	49. 58. 19	51. 33. 50	53. 8. 56	54. 43. 35
2		62. 30. 23	64. 2. 28	65. 34. 9	67. 5. 25
3		74. 35. 48	76. 4. 43	77. 33. 17	79. 1. 28
4		86. 17. 21	87. 43. 33	89. 9. 28	90. 35. 6
5		97. 39. 9	99. 3. 13	100. 27. 4	101. 50. 40
6		108. 45. 57	110. 8. 28	111. 30. 51	112. 53. 5
7		119. 42. 28			
5	Antares.	44. 8. 35	45. 39. 57	47. 11. 7	48. 42. 4
6		56. 14. 4	57. 43. 57	59. 13. 42	60. 43. 18
7		68. 9. 34	69. 38. 31	71. 7. 25	72. 36. 15
8		79. 59. 33	81. 28. 7	82. 56. 40	84. 25. 12
9		91. 47. 58	93. 16. 35	94. 45. 14	96. 13. 55
10		103. 38. 7			
10	α Aquilæ.	60. 4. 51	61. 12. 48	62. 21. 20	63. 30. 24
11		69. 23. 6	70. 34. 57	71. 47. 9	72. 59. 44
12		79. 7. 26	80. 21. 47	81. 36. 22	82. 51. 10
13	Fomalhaut.	57. 57. 55	59. 24. 47	60. 51. 56	62. 19. 23
14		69. 40. 32	71. 9. 29	72. 38. 38	74. 8. 1
15		81. 38. 4	83. 8. 41	84. 39. 31	86. 10. 31
16	α Arietis.	30. 27. 29	31. 56. 51	33. 26. 58	34. 57. 47
17		42. 40. 2	44. 13. 53	45. 48. 8	47. 22. 48
18		55. 21. 35	56. 58. 23	58. 35. 31	60. 12. 59
19		68. 25. 2	70. 4. 22	71. 44. 1	73. 23. 58
20	Aldebaran.	51. 25. 50	53. 7. 58	54. 50. 27	56. 33. 15
21		65. 12. 7	66. 56. 49	68. 41. 48	70. 27. 5
22		79. 17. 50	81. 4. 47	82. 52. 0	84. 39. 26
23		93. 40. 8			
23	Regulus.	13. 51. 6	15. 35. 19	17. 20. 31	19. 6. 36
24		28. 7. 2	29. 56. 22	31. 45. 57	33. 35. 47
25		42. 46. 54	44. 37. 23	46. 27. 55	48. 18. 28

The Satellites of JUPITER will not be visible this Month,
JUPITER being too near the SUN.

[1. NOVEMBER 1780. [121]				
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
			First Quarter —	3. 13. 48
			Full Moon —	11. 16. 41
			Last Quarter —	18. 22. 0
			New Moon —	25. 17. 37
			Other Phenomena.	
			D.	
1	W.	All Saints.	1.	$\zeta \tau \nearrow 2^h. 38'.$
2	Th.	Pr. Edward born.		$\zeta \beta \nearrow$ diff. Lat. $13'.$
3	F.	On mor. of All Souls, 1	3.	$\zeta \epsilon \vee 23^h. 28'.$
4	Sa.	[ret. [Plot, 1605.	5.	$\zeta \delta \nearrow$ diff. Lat. $9'.$
5	Su.	24th Su. after Tr. Powder-	6.	$\zeta \text{rad} \downarrow \approx 4^h. 5'.$
6	M.	Leonard. M. T. begins.		$\zeta \text{ad} \downarrow \approx 5^h. 0'.$
7	Tu.	Duke of Cumberland born.		$\zeta \text{ad} \downarrow \approx 5^h. 8'.$
8	W.	Prs. Aug. Sophia born.	8.	$\zeta \eta \nearrow$ diff. Lat. $1'.$
9	Th.		11.	ζ eclipsed, visible.
10	F.		14.	$\zeta 125 \nearrow 3^h. 44'.$
11	Sa.	St. Martin.	16.	$\zeta \text{ad} \downarrow \approx 15^h. 44'.$
12	Su.	25th Su. after Tr. On mor.	18.	$\zeta \eta \searrow$ Im. $15^h. 40\frac{1}{2}'.$
13	M.	Britius. [of S. Mar. 2 ret.		$4\frac{1}{2}'$ N. of D' 's center.
14	Tu.	[Cam. T. div. m.		Em. $16^h. 47'.$ * $7' \text{ N.}$
15	W.	Machutus.		$\zeta \theta$ Ophi. diff. Lat. $42'.$
16	Th.		19.	$\zeta \alpha \approx$ diff. Lat. $36'.$
17	F.	Hugh Bp. of Lincoln.		$\zeta \theta \nearrow$ diff. Lat. $37'.$
18	Sa.	In 8 days of S. Mar. 3 ret.	20.	$\zeta \theta \nearrow$ diff. Lat. $11'.$
19	Su.	26th Sunday after Trinity.		$\zeta \theta \nearrow$ diff. Lat. $49'.$
20	M.	Edmund K. and Mart.	21.	$\odot$ enters $\nearrow$ at $3^h. 28'.$
21	Tu.			$\zeta \gamma \nearrow$ Im. not visible.
22	W.	Cecilia.		Em. $15^h. 13'.$ * $5\frac{1}{2}' \text{ N.}$
23	Th.	St. Clement.		of D' 's center.
24	F.	[days of St. Mar. 4 ret.	22.	$\zeta \theta \nearrow 5^h. 44'.$
25	Sa.	D. of Gl. born. Cath. In 15		$\zeta \delta 8^h. 14^h.$
26	Su.	27th Sunday after Trinity.		$\zeta \theta 9^h. 47'.$
27	M.		23.	$\zeta \lambda \nearrow 13^h. 9'.$
28	Tu.	Michaelmas Term ends.	24.	$\zeta \alpha \approx 2^h. 53'.$
29	W.		28.	$\zeta \phi \nearrow 3^h. 26'.$
30	Th.	St. Andrew.		$\zeta \sigma \nearrow 7^h. 30'.$
				$\zeta \tau \nearrow 12^h. 0'.$

[122] NOVEMBER 1780. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	7. 9. 42. 7	14. 29. 10, 2	14. 44. 19	16. 13, 6	0, 0
2	Th.	7. 10. 42. 20	14. 33. 6, 7	15. 3. 16	16. 13, 6	0, 8
3	F.	7. 11. 42. 34	14. 37. 4, 1	15. 21. 58	16. 12, 8	1, 6
4	Sa.	7. 12. 42. 50	14. 41. 2, 2	15. 40. 25	16. 11, 2	2, 4
5	Su.	7. 13. 43. 7	14. 45. 1, 2	15. 58. 36	16. 8, 8	3, 2
6	M.	7. 14. 43. 25	14. 49. 0, 9	16. 16. 31	16. 5, 6	4, 0
7	Tu.	7. 15. 43. 44	14. 53. 1, 4	16. 34. 10	16. 1, 6	4, 8
8	W.	7. 16. 44. 5	14. 57. 2, 8	16. 51. 31	15. 56, 8	5, 7
9	Th.	7. 17. 44. 28	15. 1. 5, 1	17. 8. 36	15. 51, 1	6, 6
10	F.	7. 18. 44. 52	15. 5. 8, 2	17. 25. 24	15. 44, 5	7, 4
11	Sa.	7. 19. 45. 18	15. 9. 12, 2	17. 41. 51	15. 37, 1	8, 2
12	Su.	7. 20. 45. 46	15. 13. 17, 0	17. 58. 1	15. 28, 9	9, 0
13	M.	7. 21. 46. 15	15. 17. 22, 6	18. 13. 53	15. 19, 9	9, 9
14	Tu.	7. 22. 46. 46	15. 21. 29, 1	18. 29. 25	15. 10, 0	10, 7
15	W.	7. 23. 47. 19	15. 25. 36, 4	18. 44. 38	14. 59, 3	11, 6
16	Th.	7. 24. 47. 53	15. 29. 44, 6	18. 59. 31	14. 47, 7	12, 5
17	F.	7. 25. 48. 30	15. 33. 53, 7	19. 14. 3	14. 35, 2	13, 4
18	Sa.	7. 26. 49. 8	15. 38. 3, 6	19. 28. 15	14. 21, 8	14, 2
19	Su.	7. 27. 49. 48	15. 42. 14, 4	19. 42. 5	14. 7, 6	15, 1
20	M.	7. 28. 50. 30	15. 46. 26, 1	19. 55. 35	13. 52, 5	15, 8
21	Tu.	7. 29. 51. 13	15. 50. 38, 5	20. 8. 42	13. 36, 7	16, 6
22	W.	8. 0. 51. 58	15. 54. 51, 7	20. 21. 27	13. 20, 1	17, 5
23	Th.	8. 1. 52. 45	15. 59. 5, 8	20. 33. 50	13. 2, 6	18, 2
24	F.	8. 2. 53. 33	16. 3. 20, 7	20. 45. 50	12. 44, 4	19, 0
25	Sa.	8. 3. 54. 23	16. 7. 36, 3	20. 57. 27	12. 25, 4	19, 8
26	Su.	8. 4. 55. 15	16. 11. 52, 7	21. 8. 39	12. 5, 6	20, 5
27	M.	8. 5. 56. 7	16. 16. 9, 8	21. 19. 28	11. 45, 1	21, 2
28	Tu.	8. 6. 57. 1	16. 20. 27, 6	21. 29. 53	11. 23, 9	21, 7
29	W.	8. 7. 57. 55	16. 24. 46, 0	21. 39. 53	11. 2, 2	22, 4
30	Th.	8. 8. 58. 51	16. 29. 5, 0	21. 49. 28	10. 39, 8	23, 2

III. NOVEMBER 1780. [123]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 11, 2	1. 6, 9	2. 30, 4	9. 996200	1. 13. 54
7	16. 12, 7	1. 7, 6	2. 30, 8	9. 995546	1. 13. 35
13	16. 14, 0	1. 8, 4	2. 31, 3	9. 994952	1. 13. 16
19	16. 15, 2	1. 9, 1	2. 31, 7	9. 994434	1. 12. 57
25	16. 16, 3	1. 9, 7	2. 32, 1	9. 993976	1. 12. 38

The Eclipses of JUPITER's Satellites will not be visible this Month, JUPITER being too near the SUN.

124 | NOVEMBER 1780. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 25^d.

1	8. 21. 42	4. 7 S	7. 22. 48	1. 24 S	19. 50 S	0. 51
4	9. 0. 2	4. 54	7. 27. 18	1. 41	21. 13	0. 57
7	9. 8. 35	5. 35	8. 1. 42	1. 55	22. 24	1. 3
10	9. 17. 26	6. 10	8. 6. 3	2. 9	23. 28	1. 10
13	9. 26. 41	6. 37	8. 10. 18	2. 20	24. 19	1. 16
16	10. 6. 28	6. 55	8. 14. 26	2. 27	25. 0	1. 20
19	10. 16. 54	7. 0	8. 18. 22	2. 31	25. 28	1. 26
22	10. 28. 11	6. 50	8. 22. 4	2. 29	25. 43	1. 30
25	11. 10. 26	6. 22	8. 25. 23	2. 21	25. 44	1. 32
28	11. 23. 50	5. 31	8. 28. 7	2. 5	25. 32	1. 31
30	0. 3. 29	4. 43	8. 29. 30	1. 49	25. 17	1. 28

V E N U S.

1	3. 1. 1	0. 57 N	5. 23. 41	0. 53 N	3. 19 N	21. 9
7	3. 10. 44	1. 30	6. 0. 12	1. 18	1. 7 N	21. 10
13	3. 20. 28	1. 59	6. 6. 51	1. 38	1. 13 S	21. 10
19	4. 0. 13	2. 24	6. 13. 39	1. 54	3. 38	21. 11
25	4. 9. 58	2. 47	6. 20. 35	2. 6	6. 7	21. 12

M A R S.

1	5. 12. 32	1. 41 N	6. 3. 16	1. 11 N	0. 13 S	21. 43
7	5. 15. 9	1. 39	6. 7. 2	1. 11	1. 42	21. 33
13	5. 57. 48	1. 36	6. 10. 49	1. 10	3. 13	21. 23
19	5. 20. 26	1. 34	6. 14. 34	1. 9	4. 41	21. 12
25	5. 23. 6	1. 31	6. 18. 19	1. 9	6. 8	21. 0

J U P I T E R.

1	7. 7. 47	1. 9 N	7. 8. 5	0. 58 N	13. 18 S	23. 51
7	7. 8. 15	1. 9	7. 9. 24	0. 58	13. 43	23. 33
13	7. 8. 42	1. 9	7. 10. 42	0. 58	14. 7	23. 14
19	7. 9. 10	1. 8	7. 12. 1	0. 58	14. 31	22. 54
25	7. 9. 37	1. 8	7. 13. 18	0. 58	14. 55	22. 34

S A T U R N.

1	8. 10. 12	1. 40 N	8. 7. 33	1. 32 N	20. 5 S	1. 55
7	8. 10. 23	1. 39	8. 8. 13	1. 32	20. 12	1. 34
13	8. 10. 34	1. 39	8. 8. 54	1. 31	20. 18	1. 12
19	8. 10. 45	1. 38	8. 9. 36	1. 31	20. 25	0. 51
25	8. 10. 56	1. 38	8. 10. 18	1. 30	20. 32	0. 28

V. NOVEMBER 1780. [125]

Days of the Month	Days of the Week	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	9. 10. 23. 3	9. 16. 44. 2	4. 25. 26 S	4. 42. 58 S
2	Th.	9. 23. 0. 0	9. 29. 11. 30	4. 57. 1	5. 7. 22
3	F.	10. 5. 19. 0	10. 11. 23. 5	5. 14. 5	5. 17. 14
4	Sa.	10. 17. 24. 17	10. 23. 23. 13	5. 16. 51	5. 13. 3
5	Su.	10. 29. 20. 27	11. 5. 16. 33	5. 5. 52	4. 55. 28
6	M.	11. 11. 12. 9	11. 17. 7. 43	4. 41. 54	4. 25. 21
7	Tu.	11. 23. 3. 50	11. 29. 0. 56	4. 5. 55	3. 43. 47
8	W.	0. 4. 59. 30	0. 10. 59. 56	3. 19. 7	2. 52. 7
9	Th.	0. 17. 2. 36	0. 23. 7. 48	2. 23. 2	1. 52. 8
10	F.	0. 29. 15. 49	1. 5. 26. 54	1. 19. 41	0. 46. 3 S
11	Sa.	1. 11. 41. 6	1. 17. 58. 41	0. 11. 34 S	0. 23. 20 N
12	Su.	1. 24. 19. 40	2. 0. 44. 8	0. 58. 16 N	1. 32. 46
13	M.	2. 7. 12. 8	2. 13. 43. 36	2. 6. 23	2. 38. 39
14	Tu.	2. 20. 18. 32	2. 26. 56. 51	3. 9. 4	3. 37. 11
15	W.	3. 3. 38. 29	3. 10. 23. 19	4. 2. 34	4. 24. 46
16	Th.	3. 17. 11. 15	3. 24. 2. 9	4. 43. 27	4. 58. 13
17	F.	4. 0. 55. 50	4. 7. 52. 10	5. 8. 47	5. 14. 56
18	Sa.	4. 14. 51. 1	4. 21. 52. 8	5. 16. 28	5. 13. 19
19	Su.	4. 28. 55. 23	5. 6. 0. 28	5. 5. 26	4. 52. 53
20	M.	5. 13. 7. 16	5. 20. 15. 23	4. 35. 48	4. 14. 26
21	Tu.	5. 27. 24. 35	6. 4. 34. 29	3. 49. 0	3. 19. 58
22	W.	6. 11. 44. 42	6. 18. 54. 49	2. 47. 46	2. 12. 57
23	Th.	6. 26. 4. 20	7. 3. 12. 45	1. 36. 5	0. 57. 49 N
24	F.	7. 10. 19. 32	7. 17. 24. 9	0. 18. 49 N	0. 20. 16 S
25	Sa.	7. 24. 26. 0	8. 1. 24. 39	0. 58. 45 S	1. 36. 2
26	Su.	8. 8. 19. 32	8. 15. 10. 18	2. 11. 31	2. 44. 44
27	M.	8. 21. 56. 34	8. 28. 38. 4	3. 15. 13	3. 42. 37
28	Tu.	9. 5. 14. 37	9. 11. 46. 12	4. 6. 40	4. 27. 10
29	W.	9. 18. 12. 45	9. 24. 34. 29	4. 44. 1	4. 57. 2
30	Th.	10. 0. 51. 31	10. 7. 4. 13	5. 6. 20	5. 11. 54

[126] NOVEMBER 1780. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declinat. at Noon.	D's Declin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	6	4. 28	281. 43	288. 48	27. 28 S	27. 6 S
2	Th.	7	5. 21	295. 45	302. 32	26. 23	25. 21
3	F.	8	6. 12	309. 5	315. 25	24. 2	22. 28
4	Sa.	9	6. 58	321. 34	327. 32	20. 40	18. 39
5	Su.	10	7. 42	333. 19	338. 58	16. 29	14. 10
6	M.	11	8. 23	344. 29	349. 54	11. 43	9. 10
7	Tu.	12	9. 3	355. 16	0. 35	6. 31	3. 49 S
8	W.	13	9. 42	5. 54	11. 14	1. 4 S	1. 43 N
9	Th.	14	10. 23	16. 37	22. 6	4. 29 N	7. 16
10	F.	15	11. 5	27. 41	33. 24	9. 59	12. 38
11	Sa.	16	11. 50	39. 18	45. 24	15. 10	17. 35
12	Su.	17	12. 39	51. 42	58. 14	19. 49	21. 50
13	M.	18	13. 32	65. 0	72. 0	23. 37	25. 6
14	Tu.	19	14. 28	79. 12	86. 35	26. 15	27. 3
15	W.	20	15. 27	94. 6	101. 41	27. 27	27. 27
16	Th.	21	16. 26	109. 18	116. 53	27. 3	26. 13
17	F.	22	17. 23	124. 23	131. 46	25. 0	23. 23
18	Sa.	23	18. 17	138. 59	146. 2	21. 26	19. 10
19	Su.	24	19. 9	152. 55	159. 39	16. 38	13. 51
20	M.	25	19. 58	166. 14	172. 44	10. 53	7. 46
21	Tu.	26	20. 46	179. 9	185. 31	4. 33 N	1. 14 N
22	W.	27	21. 35	191. 53	198. 18	2. 5 S	5. 22 S
23	Th.	28	22. 26	204. 46	211. 19	8. 35	11. 41
24	F.	29	23. 18	218. 0	224. 50	14. 38	17. 22
25	Sa.	1	0	231. 49	238. 56	19. 51	22. 2
26	Su.	2	0. 13	246. 12	253. 34	23. 53	25. 22
27	M.	3	1. 11	261. 0	268. 28	26. 28	27. 10
28	Tu.	4	2. 8	275. 54	283. 14	27. 28	27. 22
29	W.	5	3. 4	290. 27	297. 29	26. 55	26. 6
30	Th.	6	3. 56	304. 18	310. 54	24. 58	23. 33

VII. NOVEMBER 1780. [127]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Proport. Log. at Noon.	Proport. Log. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	W.	15. 23	15. 16	56. 26	56. 3	5037	5067
2	Th.	15. 11	15. 5	55. 42	55. 22	5094	5120
3	F.	15. 1	14. 57	55. 5	54. 51	5142	5161
4	Sa.	14. 54	14. 51	54. 40	54. 30	5175	5189
5	Su.	14. 49	14. 48	54. 24	54. 19	5197	5203
6	M.	14. 48	14. 48	54. 18	54. 19	5205	5203
7	Tu.	14. 49	14. 50	54. 22	54. 27	5199	5193
8	W.	14. 52	14. 55	54. 34	54. 43	5183	5171
9	Th.	14. 58	15. 1	54. 54	55. 6	5157	5141
10	F.	15. 4	15. 8	55. 18	55. 31	5125	5108
11	Sa.	15. 12	15. 16	55. 45	56. 1	5090	5069
12	Su.	15. 20	15. 24	56. 16	56. 31	5050	5031
13	M.	15. 28	15. 32	56. 46	57. 1	5012	4992
14	Tu.	15. 36	15. 40	57. 16	57. 29	4973	4957
15	W.	15. 44	15. 48	57. 43	57. 58	4940	4921
16	Th.	15. 51	15. 55	58. 10	58. 23	4906	4890
17	F.	15. 58	16. 1	58. 35	58. 46	4875	4861
18	Sa.	16. 4	16. 7	58. 57	59. 7	4848	4835
19	Su.	16. 9	16. 11	59. 16	59. 23	4824	4816
20	M.	16. 13	16. 15	59. 30	59. 36	4808	4800
21	Tu.	16. 16	16. 17	59. 41	59. 45	4794	4789
22	W.	16. 18	16. 17	59. 45	59. 44	4789	4790
23	Th.	16. 16	16. 14	59. 40	59. 33	4795	4804
24	F.	16. 11	16. 8	59. 24	59. 13	4815	4828
25	Sa.	16. ,	16. 0	59. 0	58. 44	4844	4864
26	Su.	15. 55	15. 50	58. 26	58. 6	4886	4911
27	M.	15. 45	15. 39	57. 46	57. 24	4936	4964
28	Tu.	15. 32	15. 26	57. 2	56. 39	4991	5021
29	W.	15. 21	15. 15	56. 19	55. 58	5046	5073
30	Th.	15. 10	15. 5	55. 39	55. 21	5098	5122

[128] NOVEMBER 1780. VIII.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Pegasi.	72. 49. 50	71. 23. 10	69. 56. 58	68. 31. 15
2		61. 30. 16	60. 7. 40	58. 45. 37	57. 24. 9
3		50. 46. 11			
3	α Arietis.	90. 12. 8	88. 42. 48	87. 13. 40	85. 44. 44
4		78. 22. 47	76. 54. 53	75. 27. 8	73. 59. 31
5		66. 43. 20	65. 16. 26	63. 49. 37	62. 22. 53
6		55. 10. 20			
6	Aldebaran.	85. 6. 46	83. 38. 53	82. 11. 0	80. 43. 4
7		73. 22. 39	71. 54. 24	70. 26. 3	68. 57. 38
8		61. 34. 13	60. 5. 13	58. 36. 7	57. 6. 54
9		49. 39. 6	48. 9. 12	46. 39. 11	45. 9. 5
10		37. 37. 8	36. 6. 31	34. 35. 53	33. 5. 17
11		25. 33. 26			
11	Pollux.	68. 41. 21	67. 6. 56	65. 32. 19	63. 57. 28
12		56. 0. 6	54. 24. 1	52. 47. 43	51. 11. 13
13		43. 5. 37	41. 27. 54	39. 50. 0	38. 11. 55
14	Regulus.	66. 29. 3	64. 50. 4	63. 10. 55	61. 31. 36
15		53. 12. 30	51. 32. 13	49. 51. 47	48. 11. 12
16		39. 46. 21	38. 5. 1	36. 23. 37	34. 42. 8
17		26. 14. 6			
17	Spica μ	80. 4. 52	78. 21. 43	76. 38. 24	74. 54. 56
18		66. 15. 25	64. 31. 6	62. 46. 40	61. 2. 6
19		52. 17. 23			
17	The Sun.	114. 46. 14	113. 10. 22	111. 34. 21	109. 58. 10
18		101. 55. 2	100. 17. 59	98. 40. 47	97. 3. 27
19		88. 54. 41	87. 16. 33	85. 38. 17	83. 59. 53
20		75. 46. 3	74. 6. 57	72. 27. 45	70. 48. 27
21		62. 30. 37	60. 50. 49	59. 10. 57	57. 31. 2
22		49. 10. 48	47. 30. 41	45. 50. 34	44. 10. 27
28	Fomalhaut.	56. 27. 40	54. 55. 7	53. 23. 7	51. 51. 41
29		44. 23. 37			
29	α Pegasi.	65. 45. 19	64. 19. 29	62. 54. 10	61. 29. 25
30		54. 34. 41	53. 13. 38	51. 53. 20	50. 33. 46
D. 1		44. 8. 24			

IX. NOVEMBER 1780. [129]

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Pegasi.	67. 6. 1	65. 41. 18	64. 17. 6	62. 53. 25
2		56. 3. 17	54. 43. 2	53. 23. 26	52. 4. 28
3	α Arietis.	84. 15. 59	82. 47. 26	81. 19. 3	79. 50. 50
4		72. 32. 3	71. 4. 42	69. 37. 28	68. 10. 21
5		60. 56. 14	59. 29. 38	58. 3. 9	56. 36. 43
6	Aldebaran.	79. 15. 4	77. 47. 2	76. 18. 58	74. 50. 50
7		67. 29. 9	66. 0. 34	64. 31. 53	63. 3. 6
8		55. 37. 34	54. 8. 7	52. 38. 34	51. 8. 53
9		43. 38. 52	42. 8. 32	40. 38. 8	39. 7. 40
10		31. 34. 42	30. 4. 12	28. 33. 48	27. 3. 32
11	Pollux.	62. 22. 25	60. 47. 9	59. 11. 40	57. 35. 59
12		49. 34. 31	47. 57. 36	46. 20. 28	44. 43. 8
13		36. 33. 39			
13	Regulus.	73. 3. 7	71. 24. 53	69. 46. 27	68. 7. 51
14		59. 52. 6	58. 12. 26	56. 32. 37	54. 52. 38
15		46. 30. 29	44. 49. 37	43. 8. 39	41. 27. 33
16		33. 0. 35	31. 19. 0	29. 37. 23	27. 55. 45
17	Spica μ	73. 11. 19	71. 27. 33	69. 43. 39	67. 59. 36
18		59. 17. 24	57. 32. 35	55. 47. 38	54. 2. 34
16	The Sun.	121. 8. 12	119. 32. 56	117. 57. 31	116. 21. 57
17		108. 21. 51	106. 45. 22	105. 8. 44	103. 31. 57
18		95. 25. 59	93. 48. 22	92. 10. 36	90. 32. 42
19		82. 21. 22	80. 42. 43	79. 3. 56	77. 25. 3
20		69. 9. 3	67. 29. 34	65. 50. 0	64. 10. 21
21		55. 51. 3	54. 11. 2	52. 30. 59	50. 50. 54
22		42. 30. 21	40. 50. 17	39. 10. 14	
27	Fomalhaut.	62. 42. 56	61. 8. 24	59. 34. 19	58. 0. 44
28		50. 20. 49	48. 50. 33	47. 20. 55	45. 51. 57
29	α Pegasi.	60. 5. 14	58. 41. 39	57. 18. 41	55. 56. 22
30		49. 14. 59	47. 57. 1	46. 39. 54	45. 23. 41

[130] NOVEMBER 1780. X.

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	60. 46. 41	62. 14. 46	63. 42. 29	65. 9. 51
2		72. 21. 46	73. 47. 14	75. 12. 25	76. 37. 20
3		83. 38. 3	85. 1. 29	86. 24. 43	87. 47. 46
4		94. 40. 16	96. 2. 18	97. 24. 13	98. 46. 1
5		105. 33. 32	106. 54. 49	108. 16. 3	109. 37. 14
6		116. 22. 59	117. 44. 8	119. 5. 19	120. 26. 31
4	Antares.	70. 24. 49	71. 54. 16	73. 23. 36	74. 52. 49
5		82. 17. 26	83. 46. 8	85. 14. 48	86. 43. 26
6		94. 6. 16	95. 34. 51	97. 3. 27	98. 32. 6
7		105. 56. 4			
7	α Aquilæ.	61. 52. 12	63. 0. 51	64. 10. 3	65. 19. 46
8		71. 15. 18	72. 27. 40	73. 40. 23	74. 53. 29
9		81. 3. 51			
9	Fomal- haut.	48. 45. 20	50. 10. 23	51. 35. 51	53. 1. 44
10		60. 16. 49	61. 44. 54	63. 13. 17	64. 42. 0
11		72. 9. 59	73. 40. 26	75. 11. 8	76. 42. 6
12		84. 20. 37			
12	α Arietis.	21. 34. 34	22. 58. 29	24. 23. 48	25. 50. 26
13		33. 19. 40	34. 51. 54	36. 24. 42	37. 58. 7
14		45. 52. 20	47. 28. 24	49. 4. 48	50. 41. 31
15	Aldeba- ran.	28. 30. 59	30. 8. 5	31. 45. 44	33. 23. 53
16		41. 40. 18	43. 20. 33	45. 1. 3	46. 41. 51
17		55. 9. 18	56. 51. 26	58. 33. 46	60. 16. 17
18		68. 51. 46			
18	Pollux.	24. 33. 18	26. 17. 39	28. 2. 10	29. 46. 51
19		38. 32. 39	40. 18. 14	42. 3. 58	43. 49. 50
20		52. 41. 7			
20	Regulus.	16. 50. 8	18. 33. 1	20. 16. 30	22. 0. 32
21		30. 47. 4	32. 33. 11	34. 19. 28	36. 5. 55
22		44. 59. 59	46. 47. 4	48. 34. 12	50. 21. 22
23		59. 17. 19	61. 4. 27	62. 51. 32	64. 38. 34
24		73. 32. 27			
29	The Sun.	40. 28. 40	41. 56. 35	43. 24. 11	44. 51. 28
30		52. 3. 23	53. 28. 55	54. 54. 10	56. 19. 10
D. 1		63. 20. 17			

XI. NOVEMBER 1780. [131]

Distances of J's Center from ☉, and from Stars west of her.

D ys.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	66. 36. 53	68. 3. 34	69. 29. 57	70. 56. 1
2		78. 1. 58	79. 26. 21	80. 50. 29	82. 14. 23
3		89. 10. 36	90. 33. 15	91. 55. 45	93. 18. 5
4		100. 7. 42	101. 29. 17	102. 50. 47	104. 12. 12
5		110. 58. 24	112. 19. 33	113. 40. 42	115. 1. 50
3	Antares.	64. 25. 33	65. 55. 36	67. 25. 29	68. 55. 14
4		76. 21. 55	77. 50. 55	79. 19. 50	80. 48. 40
5		88. 12. 1	89. 40. 35	91. 9. 9	92. 37. 42
6		100. 0. 46	101. 29. 30	102. 58. 17	104. 27. 8
7	α Aquilæ.	66. 29. 58	67. 40. 38	68. 51. 46	70. 3. 20
8		76. 6. 56	77. 20. 42	78. 34. 47	79. 49. 11
9	Fomal- haut.	54. 28. 0	55. 54. 40	57. 21. 41	58. 49. 4
10		66. 11. 2	67. 40. 21	69. 9. 56	70. 39. 49
11		78. 13. 19	79. 44. 47	81. 16. 30	82. 48. 27
12	α Arietis.	27. 18. 17	28. 47. 14	30. 17. 11	31. 48. 2
13		39. 32. 6	41. 6. 31	42. 41. 21	44. 16. 38
14		52. 18. 33			
14	Aldeba- ran.	22. 9. 0	23. 43. 25	25. 18. 35	26. 54. 27
15		35. 2. 29	36. 41. 25	38. 20. 42	40. 0. 19
16		48. 22. 53	50. 4. 9	51. 45. 39	53. 27. 22
17		61. 59. 1	63. 41. 56	65. 25. 2	67. 8. 19
18	Pollux.	31. 31. 42	33. 16. 43	35. 1. 53	36. 47. 11
19		45. 35. 50	47. 21. 58	49. 8. 13	50. 54. 36
20	Regulus.	23. 45. 3	25. 30. 3	27. 15. 24	29. 1. 6
21		37. 52. 33	39. 39. 16	41. 26. 5	43. 12. 59
22		52. 8. 34	53. 55. 46	55. 42. 58	57. 30. 9
23		66. 25. 32	68. 12. 25	69. 59. 12	71. 45. 52
29	The Sun.	46. 18. 26	47. 45. 6	49. 11. 29	50. 37. 35
30		57. 43. 53	59. 8. 21	60. 32. 34	61. 56. 33

[132] NOVEMBER 1780. XII.

The Satellites of JUPITER are not visible this Month,
JUPITER being too near the SUN.

I. DECEMBER 1780. [133]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D.H.M.
1	F.		First Quarter — 3. 10. 30
2	Sa.		Full Moon — 11. 7. 54
			Last Quarter — 18. 5. 35
			New Moon — 25. 7. 55
3	Su.	<i>Advent Sunday.</i>	D. Other Phenomena.
4	M.		1. ☾ ☿ ☿ 7 ^h . 45 ⁷ .
5	Tu.		3. ☾ ♄ ad ☿ 12 ^h . 1 ⁷ .
6	W.	Nicholas.	☾ ♀ ad ☿ 12 ^h . 56 ⁷ .
7	Th.		☾ ♀ ad ☿ 13 ^h . 3 ⁷ .
8	F.	Conception of V. Mary.	4. ♀ ☿ ☿ diff. Lat. 41 ⁷ .
9	Sa.		11. ☾ ♄ ☿ 11 ^h . 14 ⁷ .
			13. ☾ ♄ ☿ 4 ^h . 13 ⁷ .
10	Su.	<i>2d Sunday in Advent.</i>	☾ ♀ ad ☿ 21 ^h . 51 ⁷ .
11	M.		15. ☾ ♄ ☿ 22 ^h . 21 ⁷ .
12	Tu.		18. ☾ ☿ ☿ 21 ^h . 54 ⁷ .
13	W.	Lucy.	19. ☾ ☿ ☿ 11 ^h . 42 ⁷ .
14	Th.		20. ☿ ♄ ☿ diff. Lat. 33 ⁷ .
15	F.		☉ enters ☿ at 15 ^h . 46 ⁷ .
16	Sa.	OSap. Camb. Ter. ends.	☾ ♄ ☿ 19 ^h . 53 ⁷ .
			☾ ☿ 20 ^h . 45 ⁷ .
17	Su.	<i>3d Sunday in Advent.</i>	21. ♀ ♄ ad ☿ diff. Lat. 9 ⁷ .
18	M.	[Oxford Term ends.	☾ ♄ ☿ 10 ^h . 1 ⁷ .
19	Tu.		22. ☾ ☿ ☿ 8 ^h . 10 ⁷ .
20	W.		☾ ♄ ☿ 12 ^h . 56 ⁷ .
21	Th.	<i>St. Thomas.</i>	☾ ☿ ☿ 16 ^h . 38 ⁷ .
22	F.		24. ☿ Stationary.
23	Sa.		28. ☾ ☿ ☿ 16 ^h . 8 ⁷ .
			30. ☾ ♄ ad ☿ 20 ^h . 1 ⁷ .
24	Su.	<i>4th Sunday in Advent.</i>	☾ ♀ ad ☿ 20 ^h . 55 ⁷ .
25	M.	<i>Christmas-Day.</i>	☾ ♀ ad ☿ 21 ^h . 3 ⁷ .
26	Tu.	<i>St. Stephen.</i>	31. ☿ ☿ ☿ diff. Lat. 7 ⁷ .
27	W.	<i>St. John.</i>	
28	Th.	<i>Innocents.</i>	
29	F.		
30	Sa.		
31	Su.	<i>Su. aft. Christ. Silvester.</i>	

[134] DECEMBER 1780. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	F.	8. 9. 59. 48	16. 33. 24, 8	21. 58. 39	10. 16, 6	23, 7
2	Sa.	8. 11. 0. 45	16. 37. 45, 1	22. 7. 23	9. 52, 9	24, 3
3	Su.	8. 12. 1. 43	16. 42. 6, 1	22. 15. 42	9. 28, 6	24, 8
4	M.	8. 13. 2. 42	16. 46. 27, 5	22. 23. 34	9. 3, 8	25, 4
5	Tu.	8. 14. 3. 41	16. 50. 49, 5	22. 31. 1	8. 38, 4	25, 9
6	W.	8. 15. 4. 41	16. 55. 12, 0	22. 38. 1	8. 12, 5	26, 3
7	Th.	8. 16. 5. 41	16. 59. 34, 9	22. 44. 34	7. 46, 2	26, 8
8	F.	8. 17. 6. 42	17. 3. 58, 3	22. 50. 41	7. 19, 4	27, 2
9	Sa.	8. 18. 7. 44	17. 8. 22, 2	22. 56. 20	6. 52, 2	27, 6
10	Su.	8. 19. 8. 46	17. 12. 46, 4	23. 1. 32	6. 24, 6	28, 0
11	M.	8. 20. 9. 49	17. 17. 11, 0	23. 6. 17	5. 56, 6	28, 3
12	Tu.	8. 21. 10. 53	17. 21. 36, 0	23. 10. 34	5. 28, 3	28, 7
13	W.	8. 22. 11. 57	17. 26. 1, 3	23. 14. 24	4. 59, 6	28, 9
14	Th.	8. 23. 13. 2	17. 30. 26, 9	23. 17. 45	4. 30, 7	29, 2
15	F.	8. 24. 14. 8	17. 34. 52, 8	23. 20. 39	4. 1, 5	29, 4
16	Sa.	8. 25. 15. 14	17. 39. 18, 8	23. 23. 5	3. 32, 1	29, 6
17	Su.	8. 26. 16. 22	17. 43. 45, 0	23. 25. 2	3. 2, 5	29, 8
18	M.	8. 27. 17. 30	17. 48. 11, 4	23. 26. 32	2. 32, 7	29, 9
19	Tu.	8. 28. 18. 39	17. 52. 38, 0	23. 27. 33	2. 2, 8	30, 1
20	W.	8. 29. 19. 49	17. 57. 4, 7	23. 28. 5	1. 32, 7	30, 2
21	Th.	9. 0. 21. 0	18. 1. 31, 6	23. 28. 10	1. 2, 5	30, 2
22	F.	9. 1. 22. 11	18. 5. 58, 4	23. 27. 46	0. 32, 3	30, 2
23	Sa.	9. 2. 23. 23	18. 10. 25, 2	23. 26. 54	0. 2, 1	30, 1
24	Su.	9. 3. 24. 36	18. 14. 52, 0	23. 25. 33	Ad: 28, 0	30, 1
25	M.	9. 4. 25. 49	18. 19. 18, 7	23. 23. 44	0. 58, 1	29, 9
26	Tu.	9. 5. 27. 2	18. 23. 45, 2	22. 21. 27	1. 28, 0	29, 7
27	W.	9. 6. 28. 14	18. 28. 11, 6	23. 18. 41	1. 57, 7	29, 6
28	Th.	9. 7. 29. 27	18. 32. 37, 8	23. 15. 28	2. 27, 3	29, 4
29	F.	9. 8. 30. 40	18. 37. 3, 9	23. 11. 46	2. 56, 7	29, 1
30	Sa.	9. 9. 31. 53	18. 41. 29, 6	23. 7. 37	3. 25, 8	28, 8
31	Su.	9. 10. 33. 5	18. 45. 55, 0	23. 3. 0	3. 54, 6	

III. DECEMBER 1780. [135]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 17, 2	1. 10, 3	2. 32, 3	9. 993560	1. 12. 19
7	16. 18, 0	1. 10, 7	2. 32, 5	9. 993203	1. 11. 59
13	16. 18, 6	1. 11, 0	2. 32, 7	9. 992938	1. 11. 40
19	16. 19, 0	1. 11, 1	2. 32, 8	9. 992772	1. 11. 21
25	16. 19, 2	1. 11, 1	2. 32, 9	9. 992682	1. 11. 2

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	21. 39. 53	3	21. 29. 59	2	13. 14. 28 I
3	16. 7. 31	7	10. 46. 18	9	17. 8. 56 I
5	10. 35. 7	11	0. 2. 28	16	21. 3. 11 I
7	5. 2. 42	14	13. 18. 38	16	22. 35. 32 E
8	23. 30. 11	18	2. 34. 38	24	0. 57. 4 I
10	17* 57. 44	21	15. 50. 34	24	2. 29. 23 E
12	12. 25. 14	25	5. 6. 28	31	4. 50. 56 I
14	6. 52. 42	28	18* 22. 20	31	6. 23. 20 E
16	1. 20. 9			IV. Satellite. Conj.	
17	19. 47. 38			2	1. 42 Sup.
19	14. 15. 3			10	12. 43 Inf.
21	8. 42. 29			18	21. 49 Sup.
23	3. 9. 55			27	8. 43 Inf.
24	21. 37. 21				
26	16. 4. 47				
28	10. 32. 14				
30	4. 59. 39				
31	23. 27. 5				

[136] DECEMBER 1780. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Inf. δ 13 ^d . 13 ^h $\frac{1}{2}$.						
1	0. 8. 32	4. 14 S	9. 0. 1	1. 39 S	25. 7 S	1. 26
4	0. 24. 35	2. 32	9. 0. 43	1. 2	24. 30	1. 16
7	1. 11. 55	0. 28 S	8. 29. 53	0. 12 S	23. 40	1. 0
10	2. 0. 18	1. 46 N	8. 27. 21	0. 47 N	22. 39	0. 35
13	2. 19. 12	3. 52	8. 23. 33	1. 45	21. 33	0. 6
16	3. 8. 0	5. 33	8. 19. 31	2. 31	20. 32	23. 27
19	3. 26. 3	6. 36	8. 16. 20	2. 57	19. 50	23. 2
22	4. 12. 55	6. 59	8. 14. 39	3. 2	19. 34	22. 45
25	4. 28. 21	6. 50	8. 14. 32	2. 53	19. 42	22. 32
28	5. 12. 23	6. 16	8. 15. 41	2. 35	20. 7	22. 25
31	5. 25. 6	5. 25	8. 17. 46	2. 11	20. 44	22. 21
VENUS.						
1	4. 19. 43	3. 4 N	6. 27. 35	2. 13 N	8. 34 S	21. 12
7	4. 29. 29	3. 16	7. 4. 41	2. 15	10. 58	21. 13
13	5. 9. 14	3. 22	7. 11. 50	2. 15	13. 16	21. 15
19	5. 18. 58	3. 23	7. 19. 3	2. 10	15. 26	21. 17
25	5. 28. 42	3. 17	7. 26. 19	2. 2	17. 22	21. 19
MARS.						
1	5. 25. 45	1. 28 N	6. 22. 3	1. 8 N	7. 33 S	20. 48
7	5. 28. 25	1. 24	6. 25. 47	1. 6	8. 57	20. 36
13	6. 1. 6	1. 21	6. 29. 31	1. 5	10. 19	20. 24
19	6. 3. 48	1. 17	7. 3. 14	1. 4	11. 36	20. 11
25	6. 6. 30	1. 13	7. 6. 57	1. 2	12. 52	19. 59
JUPITER.						
1	7. 10. 5	1. 8 N	7. 14. 34	0. 58 N	15. 18 S	22. 13
7	7. 10. 33	1. 7	7. 15. 48	0. 58	15. 40	21. 52
13	7. 11. 0	1. 7	7. 17. 1	0. 59	16. 0	21. 31
19	7. 11. 28	1. 7	7. 18. 11	0. 59	16. 18	21. 9
25	7. 11. 55	1. 6	7. 19. 21	0. 59	16. 37	20. 46
SATURN. δ 2 ^d . 3 ^h .						
1	8. 11. 6	1. 38 N	8. 11. 1	1. 29 N	20. 39 S	0. 5
7	8. 11. 17	1. 38	8. 11. 43	1. 29	20. 45	23. 40
13	8. 11. 28	1. 37	8. 12. 26	1. 29	20. 51	23. 16
19	8. 11. 39	1. 37	8. 13. 8	1. 29	20. 56	22. 51
25	8. 11. 50	1. 37	8. 13. 49	1. 28	21. 1	22. 27

V. D E C E M B E R 1780. [137]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	F.	10. 13. 12. 52	10. 19. 17. 58	5. 13. 49 S	5. 12. 10 S
2	Sa.	10. 25. 19. 58	11. 1. 19. 26	5. 7. 4	4. 58. 39
3	Su.	11. 7. 16. 56	11. 13. 13. 5	4. 47. 2	4. 32. 23
4	M.	11. 19. 8. 30	11. 25. 3. 51	4. 14. 52	3. 54. 36
5	Tu.	0. 0. 59. 45	0. 6. 56. 50	3. 31. 49	3. 6. 40
6	W.	0. 12. 55. 41	0. 18. 56. 55	2. 39. 21	2. 10. 7
7	Th.	0. 25. 1. 4	1. 1. 8. 36	1. 39. 11	1. 6. 51 S
8	F.	1. 7. 20. 1	1. 13. 35. 36	0. 33. 25 S	0. 0. 47 N
9	Sa.	1. 19. 55. 44	1. 26. 20. 34	0. 35. 20 N	1. 9. 51
10	Su.	2. 2. 50. 17	2. 9. 24. 51	1. 43. 49	2. 16. 49
11	M.	2. 16. 4. 16	2. 22. 48. 20	2. 48. 18	3. 17. 47
12	Tu.	2. 29. 36. 48	3. 6. 29. 19	3. 44. 45	4. 8. 42
13	W.	3. 13. 25. 28	3. 20. 24. 43	4. 29. 12	4. 45. 49
14	Th.	3. 27. 26. 38	4. 4. 30. 32	4. 58. 13	5. 6. 8
15	F.	4. 11. 36. 1	4. 18. 42. 27	5. 9. 24	5. 7. 56
16	Sa.	4. 25. 49. 25	5. 2. 56. 22	5. 1. 42	4. 50. 49
17	Su.	5. 10. 3. 3	5. 17. 9. 14	4. 35. 28	4. 15. 54
18	M.	5. 24. 14. 6	6. 1. 18. 13	3. 52. 27	3. 25. 30
19	Tu.	6. 8. 20. 41	6. 15. 21. 53	2. 55. 30	2. 22. 58
20	W.	6. 22. 21. 35	6. 29. 19. 35	1. 48. 24	1. 12. 22 N
21	Th.	7. 6. 15. 53	7. 13. 10. 20	0. 35. 26 N	0. 1. 50 S
22	F.	7. 20. 2. 49	7. 26. 53. 9	0. 38. 52 S	1. 15. 5
23	Sa.	8. 3. 41. 12	8. 10. 26. 43	1. 49. 59	2. 23. 4
24	Su.	8. 17. 9. 33	8. 23. 49. 22	2. 53. 55	3. 22. 3
25	M.	9. 0. 26. 4	9. 6. 59. 23	3. 47. 13	4. 9. 7
26	Tu.	9. 13. 29. 12	9. 19. 55. 14	4. 27. 33	4. 42. 21
27	W.	9. 26. 17. 34	10. 2. 36. 4	4. 53. 28	5. 0. 52
28	Th.	10. 8. 50. 48	10. 15. 1. 56	5. 4. 34	5. 4. 38
29	F.	10. 21. 9. 34	10. 27. 14. 0	5. 1. 11	4. 54. 20
30	Sa.	11. 3. 15. 34	11. 9. 14. 42	4. 44. 16	4. 31. 4
31	Su.	11. 15. 11. 51	11. 21. 7. 33	4. 15. 2	3. 56. 19

[138] D E C E M B E R 1780. VI.

Days of the Month	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	F.	7	4. 45	317. 17	323. 27	21. 53 S	19. 59 S
2	Sa.	8	5. 29	329. 25	335. 12	17. 54	15. 40
3	Su.	9	6. 11	340. 49	346. 19	13. 17	10. 47
4	M.	10	6. 51	351. 42	357. 2	8. 12	5. 33
5	Tu.	11	7. 30	2. 19	7. 36	2. 50 S	0. 6 S
6	W.	12	8. 10	12. 55	18. 19	2. 40 N	5. 25 N
7	Th.	13	8. 51	23. 47	29. 24	8. 9	10. 50
8	F.	14	9. 34	35. 10	41. 8	13. 27	15. 57
9	Sa.	15	10. 21	47. 19	53. 44	18. 18	20. 29
10	Su.	16	11. 13	60. 25	67. 22	22. 27	24. 8
11	M.	17	12. 9	74. 33	81. 58	25. 32	26. 34
12	Tu.	18	13. 9	89. 34	97. 18	27. 13	27. 27
13	W.	19	14. 9	105. 5	112. 53	27. 15	26. 37
14	Th.	20	15. 8	120. 35	128. 11	25. 34	24. 7
15	F.	21	16. 3	135. 36	142. 50	22. 16	20. 6
16	Sa.	22	16. 55	149. 52	156. 42	17. 39	14. 57
17	Su.	23	17. 44	163. 21	169. 52	12. 3	9. 0
18	M.	24	18. 32	176. 15	182. 33	5. 51 N	2. 37 N
19	Tu.	25	19. 19	188. 49	195. 4	0. 37 S	3. 51 S
20	W.	26	20. 7	201. 21	207. 42	7. 2	10. 7
21	Th.	27	20. 57	214. 8	220. 42	13. 4	15. 47
22	F.	28	21. 50	227. 25	234. 16	18. 24	20. 42
23	Sa.	29	22. 45	241. 17	248. 27	22. 43	24. 24
24	Su.	30	23. 42	255. 44	263. 6	25. 44	26. 41
25	M.	1	♄	270. 29	277. 51	27. 15	27. 26
26	Tu.	2	0. 39	285. 9	292. 20	27. 13	26. 39
27	W.	3	1. 32	299. 20	306. 8	25. 43	24. 29
28	Th.	4	2. 23	312. 44	319. 6	22. 58	21. 11
29	F.	5	3. 9	325. 15	331. 12	19. 13	17. 3
30	Sa.	6	3. 53	336. 58	342. 34	14. 44	12. 18
31	Su.	7	4. 34	348. 3	353. 25	9. 45	7. 8

VII. DECEMBER 1780. [139]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	F.	15. 1	14. 57	55. 6	54. 52	5141	5159
2	Sa.	14. 54	14. 52	54. 41	54. 33	5174	5185
3	Su.	14. 50	14. 49	54. 27	54. 24	5193	5197
4	M.	14. 49	14. 49	54. 22	54. 24	5199	5197
5	Tu.	14. 51	14. 53	54. 28	54. 36	5191	5181
6	W.	14. 55	14. 58	54. 44	54. 56	5170	5154
7	Th.	15. 2	15. 6	55. 9	55. 24	5137	5118
8	F.	15. 10	15. 15	55. 39	55. 56	5098	5076
9	Sa.	15. 20	15. 25	56. 15	56. 35	5051	5026
10	Su.	15. 31	15. 36	56. 56	57. 16	4999	4973
11	M.	15. 42	15. 46	57. 36	57. 53	4949	4927
12	Tu.	15. 51	15. 55	58. 10	58. 25	4906	4887
13	W.	15. 59	16. 2	58. 39	58. 52	4870	4854
14	Th.	16. 5	16. 7	59. 2	59. 10	4842	4832
15	F.	16. 9	16. 10	59. 16	59. 20	4824	4820
16	Sa.	16. 11	16. 11	59. 24	59. 25	4815	4813
17	Su.	16. 12	16. 11	59. 25	59. 24	4813	4815
18	M.	16. 11	16. 10	59. 22	59. 18	4817	4822
19	Tu.	16. 8	16. 7	59. 14	59. 8	4827	4834
20	W.	16. 5	16. 3	59. 2	58. 55	4842	4850
21	Th.	16. 1	15. 58	58. 46	58. 37	4861	4872
22	F.	15. 55	15. 52	58. 26	58. 14	4886	4901
23	Sa.	15. 49	15. 45	58. 1	57. 47	4917	4934
24	Su.	15. 41	15. 37	57. 32	57. 17	4953	4972
25	M.	15. 32	15. 28	57. 1	56. 44	4992	5014
26	Tu.	15. 23	15. 18	56. 27	56. 10	5036	5058
27	W.	15. 14	15. 10	55. 54	55. 38	5079	5099
28	Th.	15. 5	15. 1	55. 23	55. 8	5119	5138
29	F.	14. 58	14. 55	54. 56	54. 45	5154	5169
30	Sa.	14. 52	14. 50	54. 35	54. 29	5182	5190
31	Su.	14. 49	14. 49	54. 23	54. 21	5198	5201

[140] DECEMBER 1780. VIII.

Distances of γ 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Arietis.	82. 27. 56	80. 58. 23	79. 29. 1	77. 59. 51
2		70. 37. 12	69. 9. 14	67. 41. 27	66. 13. 49
3		58. 57. 58	57. 31. 13	56. 4. 36	54. 38. 6
4		47. 27. 26	46. 1. 39	44. 36. 0	43. 10. 29
5		36. 5. 17			
5	Aldebaran.	65. 31. 55	64. 3. 40	62. 35. 21	61. 6. 57
6		53. 43. 33	52. 14. 31	50. 45. 21	49. 16. 4
7		41. 47. 45	40. 17. 44	38. 47. 37	37. 17. 26
8		29. 45. 24	28. 14. 57	26. 44. 37	25. 14. 32
9		17. 50. 38			
9	Pollux.	60. 25. 0	58. 48. 55	57. 12. 32	55. 35. 52
10		47. 28. 13	45. 49. 49	44. 11. 8	42. 32. 11
11		34. 13. 18			
11	Regulus.	70. 42. 56	69. 2. 33	67. 21. 55	65. 41. 2
12		57. 13. 2	55. 30. 46	53. 48. 19	52. 5. 40
13		43. 29. 46	41. 46. 11	40. 2. 30	38. 18. 44
14		29. 38. 47	27. 54. 49	26. 10. 55	24. 27. 7
15	Spica α	69. 28. 42	67. 42. 53	65. 57. 2	64. 11. 9
16		55. 21. 16	53. 35. 17	51. 49. 20	50. 3. 23
17		41. 14. 0	39. 28. 16	37. 42. 38	35. 57. 4
18		27. 10. 53			
16	The Sun.	119. 18. 22	117. 39. 52	116. 1. 20	114. 22. 48
17		106. 10. 9	104. 31. 39	102. 53. 11	101. 14. 44
18		93. 2. 58	91. 24. 45	89. 46. 36	88. 8. 29
19		79. 58. 45	78. 21. 1	76. 43. 21	75. 5. 45
20		66. 58. 58	65. 21. 53	63. 44. 53	62. 8. 0
21		54. 5. 15	52. 29. 3	50. 52. 59	49. 17. 3
22		41. 19. 37			
27	α Arietis.	99. 0. 21	97. 27. 21	95. 54. 35	94. 22. 2
28		86. 42. 46	85. 11. 36	83. 40. 40	82. 9. 57
29		74. 39. 47	73. 10. 24	71. 41. 13	70. 12. 15
30		62. 50. 26	61. 22. 39	59. 55. 2	58. 27. 37
31	Aldebaran.	81. 11. 8	79. 43. 2	78. 15. 0	76. 47. 2
J. 1		69. 27. 53			

IX. DECEMBER 1780. [141]

Distances of β 's Center from $\odot$, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Arietis.	76. 30. 53	75. 2. 10	73. 33. 39	72. 5. 20
2		64. 46. 21	63. 19. 2	61. 51. 52	60. 24. 51
3		53. 11. 44	51. 45. 29	50. 19. 21	48. 53. 20
4		41. 45. 7	40. 19. 54	38. 54. 52	37. 29. 59
5	Aldebaran.	59. 38. 28	58. 9. 54	56. 41. 13	55. 12. 26
6		47. 46. 39	46. 17. 6	44. 47. 26	43. 17. 39
7		35. 47. 8	34. 16. 42	32. 46. 16	31. 15. 50
8		23. 44. 46	22. 15. 25	20. 46. 33	19. 18. 16
9	Pollux.	53. 58. 55	52. 21. 40	50. 44. 8	49. 6. 19
10		40. 52. 57	39. 13. 27	37. 33. 40	35. 53. 37
11	Regulus.	63. 59. 54	62. 18. 31	60. 36. 54	58. 55. 5
12		50. 22. 49	48. 39. 47	46. 56. 35	45. 13. 15
13		36. 34. 51	34. 50. 51	33. 6. 50	31. 22. 49
14		22. 43. 28			
14	Spica π	76. 31. 23	74. 45. 48	73. 0. 10	71. 14. 28
15		62. 25. 13	60. 39. 15	58. 53. 16	57. 7. 16
16		48. 17. 27	46. 31. 31	44. 45. 38	42. 59. 48
17		34. 11. 36	32. 26. 14	30. 41. 0	28. 55. 53
16	The Sun.	112. 44. 16	111. 5. 44	109. 27. 12	107. 48. 40
17		99. 36. 19	97. 57. 55	96. 19. 34	94. 41. 15
18		86. 30. 26	84. 52. 25	83. 14. 28	81. 36. 35
19		73. 28. 14	71. 50. 47	70. 13. 26	68. 36. 9
20		60. 31. 13	58. 54. 33	57. 18. 0	55. 41. 36
21		47. 41. 15	46. 5. 36	44. 30. 7	42. 54. 47
27	α Arietis.	92. 49. 43	91. 17. 38	89. 45. 47	88. 14. 10
28		80. 39. 28	79. 9. 13	77. 39. 11	76. 9. 23
29		68. 43. 29	67. 14. 56	65. 46. 34	64. 18. 24
30		57. 0. 22			
30	Aldebaran.	87. 4. 25	85. 35. 57	84. 7. 35	82. 39. 19
31		75. 19. 7	73. 51. 16	72. 23. 26	70. 55. 39

Distances of J's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	63. 20. 17	64. 43. 49	66. 7. 9	67. 30. 16
2		74. 23. 4	75. 45. 8	77. 7. 4	78. 28. 52
3		85. 16. 13	86. 37. 25	87. 58. 35	89. 19. 41
4		96. 4. 48	97. 25. 49	98. 46. 51	100. 7. 56
5		106. 54. 5	108. 15. 33	109. 37. 7	110. 58. 48
6		117. 49. 4	119. 11. 34	120. 34. 14	
4	α Aquilæ.	58. 51. 6	59. 58. 7	61. 5. 40	62. 13. 46
5		68. 1. 44	69. 12. 41	70. 24. 1	71. 35. 44
6		77. 39. 38			
6	Fomalhaut.	44. 58. 6	46. 21. 18	47. 44. 58	49. 9. 6
7		56. 16. 23	57. 43. 4	59. 10. 7	60. 37. 34
8		68. 0. 20	69. 29. 56	70. 59. 53	72. 30. 10
9		80. 6. 36			
9	α Arietis.	17. 53. 38	19. 12. 4	20. 32. 44	21. 55. 31
10		29. 14. 38	30. 46. 3	32. 18. 19	33. 51. 30
11		41. 47. 27	43. 24. 20	45. 1. 41	46. 39. 29
12		54. 54. 40			
12	Aldebaran.	24. 38. 54	26. 16. 50	27. 55. 26	29. 34. 40
13		37. 58. 39	39. 40. 39	41. 22. 58	43. 5. 35
14		51. 42. 28	53. 26. 28	55. 10. 38	56. 54. 56
15		65. 38. 27			
15	Pollux.	21. 20. 14	23. 5. 57	24. 51. 44	26. 37. 37
16		35. 28. 4	37. 14. 16	39. 0. 29	40. 46. 43
17		49. 38. 2	51. 24. 16	53. 10. 29	54. 56. 40
18	Regulus.	27. 38. 12	29. 22. 45	31. 7. 24	32. 52. 9
19		41. 36. 33	43. 21. 25	45. 6. 16	46. 51. 5
20		55. 34. 35	57. 19. 6	59. 3. 32	60. 47. 54
21		69. 28. 29	71. 12. 19	72. 56. 3	74. 39. 40
22	Spica ♀	29. 17. 19	30. 59. 31	32. 41. 40	34. 23. 46
23		42. 52. 45	44. 34. 10	46. 15. 25	47. 56. 32
24		56. 19. 35			
29	The Sun.	42. 53. 12	44. 16. 8	45. 38. 54	47. 1. 31
30		53. 52. 17	55. 14. 2	56. 35. 40	57. 57. 11
31		64. 43. 14	66. 4. 12	67. 25. 7	68. 45. 59
J. 1		75. 29. 50			

XI. DECEMBER 1780. [143]

Distances of γ 's Center from $\odot$, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	68. 53. 11	70. 15. 54	71. 38. 28	73. 0. 51
2		79. 50. 33	81. 12. 6	82. 33. 34	83. 54. 56
3		90. 40. 45	92. 1. 47	93. 22. 48	94. 43. 48
4		101. 29. 2	102. 50. 11	104. 11. 25	105. 32. 43
5		112. 20. 35	113. 42. 29	115. 4. 32	116. 26. 44
3	α Aquilæ.	54. 29. 40	55. 34. 1	56. 39. 3	57. 44. 46
4		63. 22. 26	64. 31. 34	65. 41. 9	66. 51. 13
5		72. 47. 51	74. 0. 18	75. 13. 6	76. 26. 13
6	Fomalhaut.	50. 33. 42	51. 58. 45	53. 24. 12	54. 50. 5
7		62. 5. 23	63. 33. 35	65. 2. 8	66. 31. 3
8		74. 0. 47	75. 31. 44	77. 3. 2	78. 34. 39
9	α Arietis.	23. 20. 14	24. 46. 41	26. 14. 39	27. 44. 4
10		35. 25. 27	37. 0. 2	38. 35. 14	40. 11. 2
11		48. 17. 45	49. 56. 27	51. 35. 32	53. 14. 57
12	Aldebaran.	31. 14. 27	32. 54. 49	34. 35. 39	36. 16. 56
13		44. 48. 30	46. 31. 40	48. 15. 4	49. 58. 39
14		58. 39. 24	60. 23. 59	62. 8. 42	63. 53. 32
15	Pollux.	28. 23. 35	30. 9. 38	31. 55. 44	33. 41. 52
16		42. 32. 58	44. 19. 14	46. 5. 30	47. 51. 46
17		56. 42. 48			
17	Regulus.	20. 41. 45	22. 25. 33	24. 9. 35	25. 53. 48
18		34. 37. 0	36. 21. 52	38. 6. 44	39. 51. 38
19		48. 35. 53	50. 20. 38	52. 5. 20	53. 49. 59
20		62. 32. 11	64. 16. 23	66. 0. 30	67. 44. 32
21		76. 23. 11			
21	Spica α	22. 28. 31	24. 10. 41	25. 52. 53	27. 35. 6
22		36. 5. 48	37. 47. 43	39. 29. 30	41. 11. 11
23		49. 37. 29	51. 18. 16	52. 58. 53	54. 39. 20
28	The Sun.		38. 43. 20	40. 6. 48	41. 30. 6
29		48. 23. 57	49. 46. 14	51. 8. 23	52. 30. 24
30		59. 18. 35	60. 39. 52	62. 1. 5	63. 22. 12
31		70. 6. 48	71. 27. 35	72. 48. 21	74. 9. 6

[144] DECEMBER 1780. XII.

Configurations of the SATELLITES of JUPITER
at 7 o' Clock in the Morning.

1		2. .1	⊙	4. .3
2		.2	⊙ 1 6 4	3.
3		4. 3. .1	⊙	.2
4		4. 3.	1. ⊙ 2.	
5	4.	.3 2.	⊙	.1
6	4.	.3 1.	⊙	2.0
7	.4		⊙ 1 6 3 2.	
8	.4	.1 2.	⊙	.3
9	.4	.2	⊙	1. 3.
10	3●	.4 .1	⊙	.2
11	1●	3.	⊙ .4 2.	
12		.3 2.	⊙ .1	.4
13	2.0	.3 1.	⊙	.4
14			⊙ .3 .1 2.	.4
15		1. 2.	⊙	.3 4.
16		.2	⊙ 1. 3.	4.
17		.1	⊙ 3. .2	4.
18		3.	⊙ 1. 2. 4.	
19	1.0	3. 2.	⊙ 4.	
20		.3 4. .2 1.	⊙	
21		4.	⊙ .3 .1 .2	
22	4.	1.	⊙	.3 2●
23	4.	.2	⊙ 1. 3.	
24	.4	.1	⊙ .2 3.	
25	.4	3.	⊙ 1. 2.	
26		3. .4 2. .1	⊙	
27		.3 .4 .2 1.	⊙	
28	3.0		⊙ .1 .4 .2	
29	2●	1.	⊙	.3 .4
30		.2	⊙ .1 3.	.4
31		.1	⊙ .2 3.	.4

EXPLANATION and USE OF THE ARTICLES

CONTAINED IN THE
ASTRONOMICAL and NAUTICAL EPHEMERIS.

IT may be proper first to premise, that all the Calculations of the Ephemeris are made according to apparent Time by the Meridian of the Royal Observatory at Greenwich: And the Sun's, Planet's, and Moon's Places, with the Particulars depending on them in the 2d, 4th, 5th, 6th, and 7th Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Centre passing the Meridian of Greenwich.

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours, or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the

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same

same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, 15 Hours belong to January 11 at Three in the Morning by civil Reckoning.

There are 12 Pages for every Month. The first Column of the first Page of each Month contains the Day of the Month; the second, the Day of the Week expressed concisely by the initial Letter or Letters, *Su.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: The third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of new and full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phenomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixed Stars not less than the fourth Magnitude, by the Moon, as they should happen at Greenwich by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60° . North and 40° . South: The Entrance of the Sun into the several Signs, and any other remarkable Phenomena.

The Stars are expressed by Bayer's Characters of Reference. The Conjunction of the Moon or a Planet with a Star, is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately after. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of *Im.* or Immersion, to signify the Disappearance behind the Moon; and *Em.* or Emerision, to signify the Re-appearance of the same. Thus $8^d \text{ } \gamma \text{ } \nu \text{ } 16^h. 22'$ signifies that the Moon will be in Conjunction with the Star $\gamma \text{ } \nu$ on the Eighth Day at $16^h. 22'$ exclusive of Parallax: And $10^d. \text{ } \epsilon \text{ } \Pi \text{ } \text{Imm. } 9^h. 14'$ *Em. } 10^h. 23'* signifies that the Moon will eclipse $\epsilon \text{ } \Pi$ on the 10th Day, the Immersion being at $9^h. 14'$. and the Emerision at $10^h. 23'$. apparent Time at Greenwich.

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The Occultations set down are those only visible at Greenwich; the Circumstances of which will commonly not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

Eclipses of the Sun, and Occultations of fixed Stars by the Moon, if observed in Places whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in Places whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallax in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any Time afterwards by themselves, at leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where an Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the Ephemeris, and converting it into Degrees, at the Rate of 15° to One Hour, &c. or more briefly by Table Pages 6, 7, 8, of the Tables requisite to be used with the Ephemeris. But, as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. It is unnecessary to mention that even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixed Stars not less than the fourth Magnitude, which may prove

Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Two first Columns of the Second Page of the Month contain the Day of the Month and Week as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time, with the Difference from Day to Day.

The Longitude of the Sun is made use of in most of the succeeding Calculations of the Ephemeris, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day. Particularly it may serve, with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the 8th, 9th, 10th, and 11th Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying as 24^h . is to the Hour from Noon reckoned by the Meridian of Greenwich, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from Greenwich, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15° , and One Minute of Time to 15 Minutes, or more briefly by Pages 6, 7, and 8, of the requisite Tables) according as the Place is to the West or to the East of Greenwich. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at $4^h. 35'$. being in $21^\circ. 15'$, Longitude East of Greenwich. The Difference of Longitude turned into Time by Table Page 6, is $1^h. 25'$ which subtracted from $4^h. 35'$, because the Place is East of Greenwich, leaves $3^h. 10'$, for the Time reduced to the Meridian of Greenwich. The Sun's Longitude the preceding Noon is $9^\circ. 29'. 18''. 2''$, and the following Noon is $10^\circ. 0'. 19'. 4''$. the Difference is, $1^\circ. 1'. 2''$, or $61'. 2''$, the daily Variation. Then say, as 24^h . is to $3^h. 10'$, so is $61'. 2''$ to $8'. 3\frac{1}{2}''$, which added to $9^\circ. 29'. 18''. 2''$, the Sun's Longitude on the preceding Noon, gives $9^\circ. 29'. 26'. 5''$ the Sun's Longitude at the

the Time given. In like Manner any other of the following Articles is to be found by the Help of the Ephemeris.

The Sun's Longitude serves also to compute the Aberration of the fixed Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose, the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the Ephemeris.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixed Star, suppose one contained Page 12 or 13 of the requisite Tables; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required jointly with the Latitude of the Place and the Sun's horary Angle to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance
from

from the Meridian, the Latitude being given ; or to compute the Time of the Sun's Setting or Rising ; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes, the Sun's Declination must be found to the Time given nearly reduced to the Meridian of Greenwich, making Proportion according to the daily Increase or Decrease, in like Manner as was shewn with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Centre over the Meridian of any Place ; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually become too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page 2d ; and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it is proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed ; *viz.* subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the Ephemeris for the Noon at Greenwich, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

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As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the Ephemeris answering to Noon were computed to 0^h. increased, or 24 Hours diminished, by the Equation of Time: And the Moon's Places set down for Midnight were computed to 12^h. increased or diminished by the Equation of Time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the Ephemeris, all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But if Watches made upon Mr. John Harrison's or other equivalent Principles should be brought into Use at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch, the Difference will be the Longitude in Time from the Meridian by which the Watch was set; as near as the Going of the Watch can be depended upon.

The Equation of Time is computed in the Manner explained in my Remarks upon that Subject, in the *Philos. Transact.* Vol. liv. P. 342 for the Year 1764; namely, by taking the Difference of the Sun's true right Ascension, and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1'. to 15'. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude.

The Semidiameter of the Sun, Page 3d, is necessary to reduce the observed Altitude of his upper or lower Limb to that of the Centre; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centres. It is also useful to Astronomers to verify or ascertain the Exactness of the Scale of their Micro-meters, by Comparison with the Measure of the Sun's horizontal Diameter. This Practice is particularly useful in solar Eclipses,

Eclipses, when the Distance of the Cusps or the Verse Sine of the uneclipsed Part has been measured with the Micro-meter. The Semidiameters of the Sun in Mayer's Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be $16'. 2''$, 8. which Mr. Mayer says he deduced from above 130 Observations taken with his Six Feet mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this Opportunity to remark, that the Quadrant here mentioned was given to the University of Göttingen by his late Majesty, and was made by that ingenious Artift the late Mr. John Bird after the Model of the Eight Feet mural Arch, which he finished for the Royal Observatory at Greenwich, and put up there in the Year 1750. Mr. Mayer made his Observations with his Six Feet mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at $23^{\circ}. 28'. 16''$ which Dr. Bradley settled by his Observations made in the Years 1750 and 1751, at $23^{\circ}. 28'. 18''$. The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about $\frac{1}{2}$ a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement of this Table with Dr. Bradley's, see Page 2d of requisite Tables (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than Two different Tables,

The Time of the Sun's Semidiameter passing the Meridian, serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Centre, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an Interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Cosine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of $1'$. to $15'$. and $1''$. to $15''$. gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Cosine of his Declination to the logistick Logarithm of his Semidiameter, the Sum is the logistick Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter

meter passing the Meridian. If the Clock by which the Observation is made be regulated according to the siderial Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required.

From the Time of the Sun's Semidiameter passing the Meridian may be also found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.—The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the Nautical Ephemeris; See British Mariner's Guide, Page 49, and Table at the End of the same, Page 25, which is also copied at Page 14 of requisite Tables. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined to equal Accuracy with the nearest. It was hoped that some means Might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from time to time. In my Voyage to Barbadoes under the Direction of the Commissioners of Longitude, I made a full Trial of the late Mr. Irwin's Marine Chair proposed for this Purpose, but found it totally impracticable to derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes, from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet focal Length, and Telescopes of Mr. Dollond's Construction with Two Object Glasses from Five to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons who visit distant Countries are not more diligent to multiply Observations of this Kind, for want of which, the Observations made by Astronomers in established Observatories lose Half their Use, and the Improvement of Geography seems to be at a Stand. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the Purpose. The Eclipses carefully calculated and set down in the Ephemeris, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person who shall be under any Meridian different from Greenwich, must turn his Difference of Longitude into Time: See Table Page 6, 7, and 8, and add it to or subtract it from the Time of the Eclipse set down in the Ephemeris, according as he is to the East or West of Greenwich, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a Hadley's Quadrant,
by

by Reflection from a Basin of Water or Quicksilver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made on Purpose. It will be better to take several Altitudes in order to take a Mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star will be shewn when we come to treat of the Method of finding the Longitude by the Observations of the Distance of the Moon from the Sun and Stars by the Help of the Ephemeris.

The Observer being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on account of the Uncertainty of their Theories; but, if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed One Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the Ephemeris for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emergences signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of

Jupiter to the Sun the Immersions and Emerfions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an astronomical Telescope be used, which reverses Objects, the Appearances will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emerfions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the Two outer Satellites. The Immersions and Emerfions marked with an Asterisk in the Ephemeris are those visible at Greenwich.

To know if an Eclipse will be visible in any Place, find if Jupiter is 8° , or 10° above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude by a Table of semi-diurnal Arcs, contained in the popular Book called the Mariner's Compass Rectified, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set down in the Ephemeris, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semidiurnal Arc answering to the same Declination of the Sun: Remembering always that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semidiurnal Arc will be more than Six Hours, and if they are of contrary Denominations, will be less than Six Hours.

The Immersion or Emerfion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from Greenwich is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the Ephemeris, which must be turned into Degrees, &c. by Table Page 6, 7, and 8; and will be East or West of Greenwich, as the Time observed is more or less than that of the Ephemeris.

Example; Suppose an Emerfion of the first Satellite should be observed at the Cape of Good Hope, May 9. 1767, at $10^h. 76'. 45''$ apparent Time: The Time by the Ephemeris being $9^h. 33'. 12''$, the Difference is $1^h. 13'. 33''$, whence by Table Page, 6, 7, and 8, the Longitude of the Cape should be $18^{\circ}. 23'. 15''$, East of Greenwich, because the Time supposed to be observed at the Cape is more than that of the Ephemeris.

It

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the Ephemeris for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what Correction the Calculations of the Ephemeris require by the nearest Observations to the given Time that can be obtained; which Correction, applied to the Calculation of the given Eclipse in the Ephemeris, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page 4, serve to know where to look for them in the Heavens, and when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits, where it is most material to observe them. They also serve to enable Persons less skilled to distinguish them from the fixed Stars. Their Declinations and apparent Time of passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's right Ascension at Noon in Time from it, to find the Time of the Planet's passing the Meridian nearly, which call T; take the Difference of the ☉ and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right Ascension, or the Sum if it is retrograde, which call X; then say, by the Rule of Proportion;

As $24^h \mp X : T :: X : e$ and $T \pm e$ will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the ☉ and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to 24^h . and take a further like proportional Part of this proportional Part; and
again

again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767.

The Sun's right Ascension in Time July 1st is, $6^h.40'.25''$. and July 2d, $6^h.44'.33''$ by the Ephemeris. Therefore his daily Motion in right Ascension is $4'.8''$. The Moon's right Ascension July 1st at Noon by the Ephemeris, is $159^\circ.2'$ answering to $10^h.36'.8''$ of Time, and July 2d is, $169^\circ.39'$, answering to $11^h.18'.36''$. The Difference is, $42'.28''$ of Time, from which $4'.8''$ being subtracted, leaves $38'.20''$. Subtract $6^h.40'.25''$, the Sun's right Ascension July 1st at Noon, from $10^h.36'.8''$, the Moon's right Ascension the same Noon, the Remainder $3^h.55'.43''$, is the Approximate Time of the Moon's passing the Meridian. The proportional Part of $38'.20''$ answering to this, is $6'.17''$, and the proportional Part of $6'.17''$ is $9''$; therefore $6'.17''$ and $9''$ or $6'.26''$ added to $3^h.55'.43''$ give $4^h.2'.9''$, the apparent Time of the Moon's passing the Meridian. In the Ephemeris it is $4^h.2'$. It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: And if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets, it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The 5th, 6th, 7th, 8th, 9th, 10th, and 11th Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motions, and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitudes, Latitudes, and Declinations of the Moon, and Time of her passing the Meridian, afford the like Uses with the same

Circumstances

Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, horizontal Parallax, with its logistic or proportional Logarithm, are computed twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at $16^h. 22'. 16''$. First to find the Longitude. The Moon's Longitude, July 16, at 12^h . is $0^s. 6'. 40'. 25''$. and July 17 at Noon, $0^s. 13'. 47'. 48''$. the Difference $7'. 7'. 23''$ is the Moon's Motion in 12 Hours; say then, by the Rule of Proportion,

As 12^h . is to $4^h. 22'. 16''$ (the Excess of $16^h. 22'. 16''$ above 12^h .) so is $7'. 7'. 23''$ to $2'. 35'. 41''$, which added to $0^s. 6'. 40'. 25''$, the Moon's Longitude at 12^h . gives $0^s. 9'. 16'. 6''$, the Moon's Longitude nearly; but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by Page 11 of Requisite Tables; for this Purpose take out of the Ephemeris the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows.

	1st Diff.	2d Diff.
July 16, Noon $11. 29. 29. 34$	$7. 10. 51$	
Midnight $0. 6. 40. 25$	$7. 7. 23$	$3. 28$
17, Noon $0. 13. 47. 48$	$7. 3. 39$	$3. 44$
Midnight $0. 20. 51. 27$		

Take their Differences, $7'. 10'. 51''$, $7'. 7'. 23''$, $7'. 3'. 39''$, take the Differences of these Differences, or the 2d Differences, $3'. 28''$; $3'. 44''$, and take their Mean which is $3'. 36''$. Now look for the Correction in Page 11 of Requisite Tables answering to $4^h. 22'$ after Midnight, found on the Side, and $3'. 36''$ at Top, $21''$ will be found under $3'$. and $28''$. under $4'$. the Difference is $7''$. when $36''$ will require $4''$, and the Correction sought is $21'' + 4'' = 25''$. which, according to the Remark at the Bottom of the Table, must be added (because the Motion in 12 Hours or first Differences are decreasing to $0^s. 9'. 16'. 6''$, the Moon's Longitude found by even Proportion;

Proportion; whence the Moon's true Longitude is $0^{\circ} 9'. 16''$, and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, vice versa, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take the Correction from Page 11, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude. Take out of the Ephemeris the Two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table Page 11 with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Differences are decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 16^h. 22'. 16''.

	D's Lat. by the Ephem.	1st Dif.	2d Dif.	Mean of 2d Dif.
	0' "	' "	' "	' "
July 16. Noon	4. 31. 10 N.	18. 26	4. 36	4. 40
Midnight	4. 49. 36	13. 50	4. 44	
17 Noon	5. 3. 26	9. 6		
Midnight	5. 12. 32			

The Moon's Latitude July 16 at Midnight being $4^{\circ} 49' 36''$ N. and the Motion in the next 12 Hours being $13'. 50''$. say by Proportion,

As

As 12^h . is to 4^h . $22' 16''$, so is $13' 50''$, to $5' 2''$; but this must be corrected by adding $33''$. the Correction from Page 11, answering to the Hour 4^h . $22'$, and the Mean second Difference $4' 40''$, because the first Differences are decreasing, or rather because the first of them $18' 26''$, is greater than the last of them $9' 6''$, therefore the proportional Part corrected is $5' 2'' + 33'' = 5' 35''$, which added to $4^\circ 49' 36''$, gives $4^\circ 55' 11''$ N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the Ephemeris for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or vice versa, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Correction from Table Page 11, answering to the Mean of the Two second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease; and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Correction corresponding to it by Table Page 11, is to be applied always with the contrary Sign.

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These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the Four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed $2\frac{1}{2}$, this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page 7, and 8, *viz.* the Moon's right Ascension, her Semidiameter, horizontal Parallax, with its Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour, may be found very readily by the Help of the Table of proportional Logarithms at the End of the requisite Tables; for which consult the Explanation of those Tables.

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of the Month, as well as in the Appulses to Stars pointed out in Page 1, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixed Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an Eclipse of the Sun, or an Occultation of a Star or Planet by the Moon observed: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the Ephemeris shews the Error of the Tables, whatever it be at that Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy not being required for

for the Calculations of Refraction and Parallax. See British Mariner's Guide, Page 57. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper or lower Limb observed at Sea. See British Mariner's Guide, Page 93. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, though no Altitude of the Sun or a Star was taken for regulating the Time. See British Mariner's Guide, Page 61.

The Distances of the Moon from the Sun and fixed Stars, contained in the 8th, 9th, 10th, and 11th Pages of the Month, are set down to every Three Hours of Apparent Time by the Meridian of Greenwich, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the same Distances observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that there is Room to hope, by future Improvements of the Lunar Tables, and the Introduction of a more accurate Method of constructing Instruments, it may be carried to a much higher Degree of Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from 90° to 120° . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the

Ephemeris, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90° and 120° Distance from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the Lunar Tables will affect the Result from either Star equally. But the Error of Mr. Mayer's last Lunar Tables as corrected by a Series of Dr. Bradley's Observations of 9 Years, being these here made use of, never exceeding $45''$, and seldom amounting to $15''$, the Uncertainty hence arising in the Determination of the Longitude can scarcely exceed 22 Miles, and generally will not exceed 10 Miles of Longitude.

The Distances set down in the Ephemeris, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the Ephemeris, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of Greenwich; and direct his Sight to the East or West of the Moon, according as the Distance at Greenwich is found in the 8th and 9th, or 10th and 11th Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at Greenwich is estimated nearly by turning the supposed Longitude from Greenwich
into

into Time, by Table Page 6, 7, and 8, and adding it to or subtracting it from the apparent Time at the Ship, as its Longitude is West or East of Greenwich. It will be sufficient if the Distance be computed from the Ephemeris within 10', or 20', for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixed Stars; namely, in determining the Longitude by Comparison with the corresponding Distances observed at Sea, will be shewn hereafter in its proper Order, in the Dissertation explaining the Method of computing the Longitude at Sea by the Help of the Ephemeris.

The Distances contained in the Ephemeris were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shewn for computing the Moon's Latitude, Page 160—162: Except that the Correction of second Differences at the Middle of the Interval to be interpolated, was taken $\frac{1}{8}$ of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken $\frac{3}{4}$ of the Correction just found at the Middle of the Interval; instead of consulting Table Page 11, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir Isaac Newton's Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. Phil. Nat. Princ. Math. Page 486. Edit. ult.

From Four Distances at Noon and Midnight computed strictly, to interpolate Three Distances at the 3d, 6th, and 9th Hour of the first or last Interval.

Subtract each Distance from the following, for the first Differences, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Differences: And in like Manner subtract the First 2d Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by b , the first or last second Difference by c ; according as the Interpolation to be made is for the first or last 12 Hours, denote also the third Difference by d ; and, a being put to signify

signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

At 3d Hour of first Interval	$a + \frac{1}{4}b - \frac{3}{32}c + \frac{7}{128}d$
At 6th Hour of first Interval	$a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$
At 9th Hour of first Interval	$a + \frac{3}{4}b - \frac{3}{32}c + \frac{5}{128}d$
Or	
At 3d Hour of last Interval	$a + \frac{1}{4}b - \frac{3}{32}c - \frac{5}{128}d$
At 6th Hour of last Interval	$a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$
At 9th Hour of last Interval	$a + \frac{3}{4}b - \frac{3}{32}c - \frac{7}{128}d$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b , c or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a Mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or 6th Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page 12th and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark $\odot$, and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right Hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their

their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher o sometimes annexed to the Figure of the Satellite towards the Margin, signifies that it is invisible on the Face of Jupiter; and the black Mark ●, signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter, and eclipsed by his Body.

T H E E N D.

their Crown, or access to the Earth, when they are married
to the right Hand of W. & at 1000 feet from him, or
to the left of him of 1000 feet, approaching him. The Crown
part of the mountain, however, is not of the same
height as the mountain, which is 1000 feet on the face
of the mountain, and the right Hand of the mountain is 1000
feet from the right Hand of the mountain, or 1000 feet
and 1000 feet by his body.

THE END

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